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THE FAR EASTERN REVIEW

Engineering
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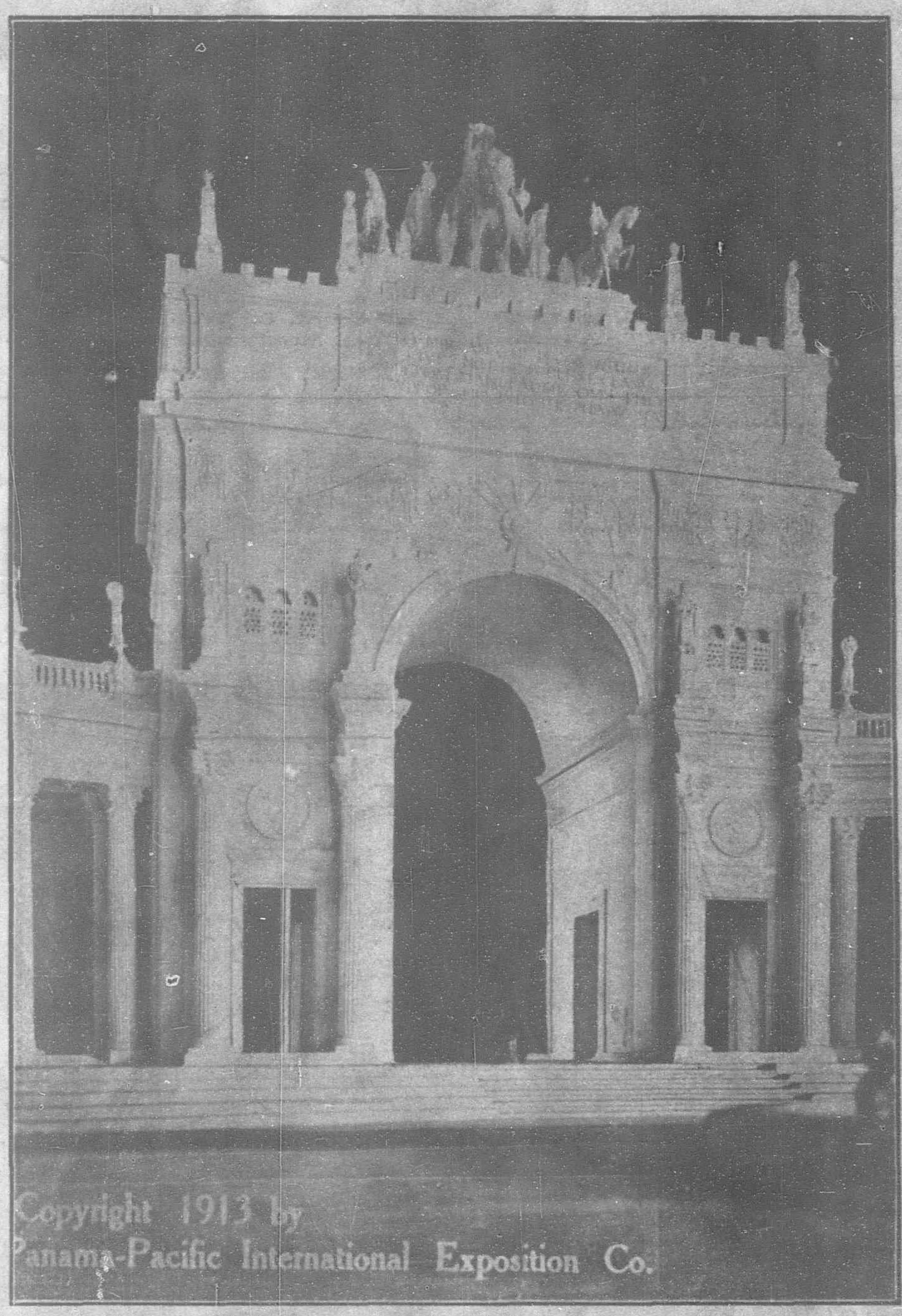
Vol. X., No. 1.

SHANGHAI—MANILA

June, 1913.

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THE PANAMA-PACIFIC INTERNATIONAL EXHIBITION.—The Triumphal Arch on the east side of the grand court of honor, the Court of the Sun and Stars, at the Panama-Pacific International Exposition, San Francisco, 1915. This triumphal arch, larger than the Arc de Triomphe at Paris, will lead into the great east or Festive Court. The size of the arch may be judged by the fact that the height of the archway will be ninety feet.

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Hongkong and Shanghai Banking Corporation

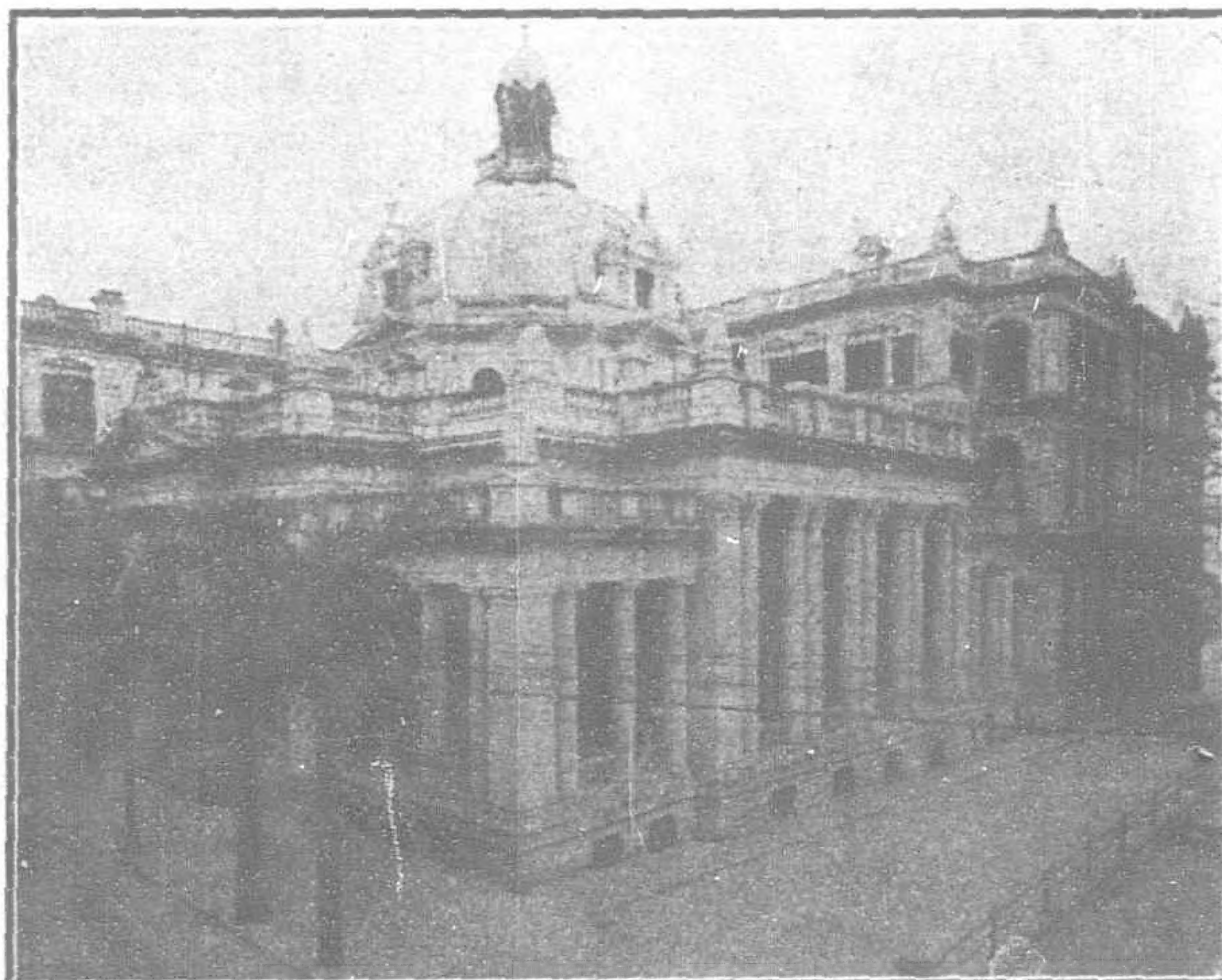
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THE FAR EASTERN REVIEW

COMMERCE :: ENGINEERING :: FINANCE

VOL. X.

SHANGHAI AND MANILA, JUNE 1913

No. 1

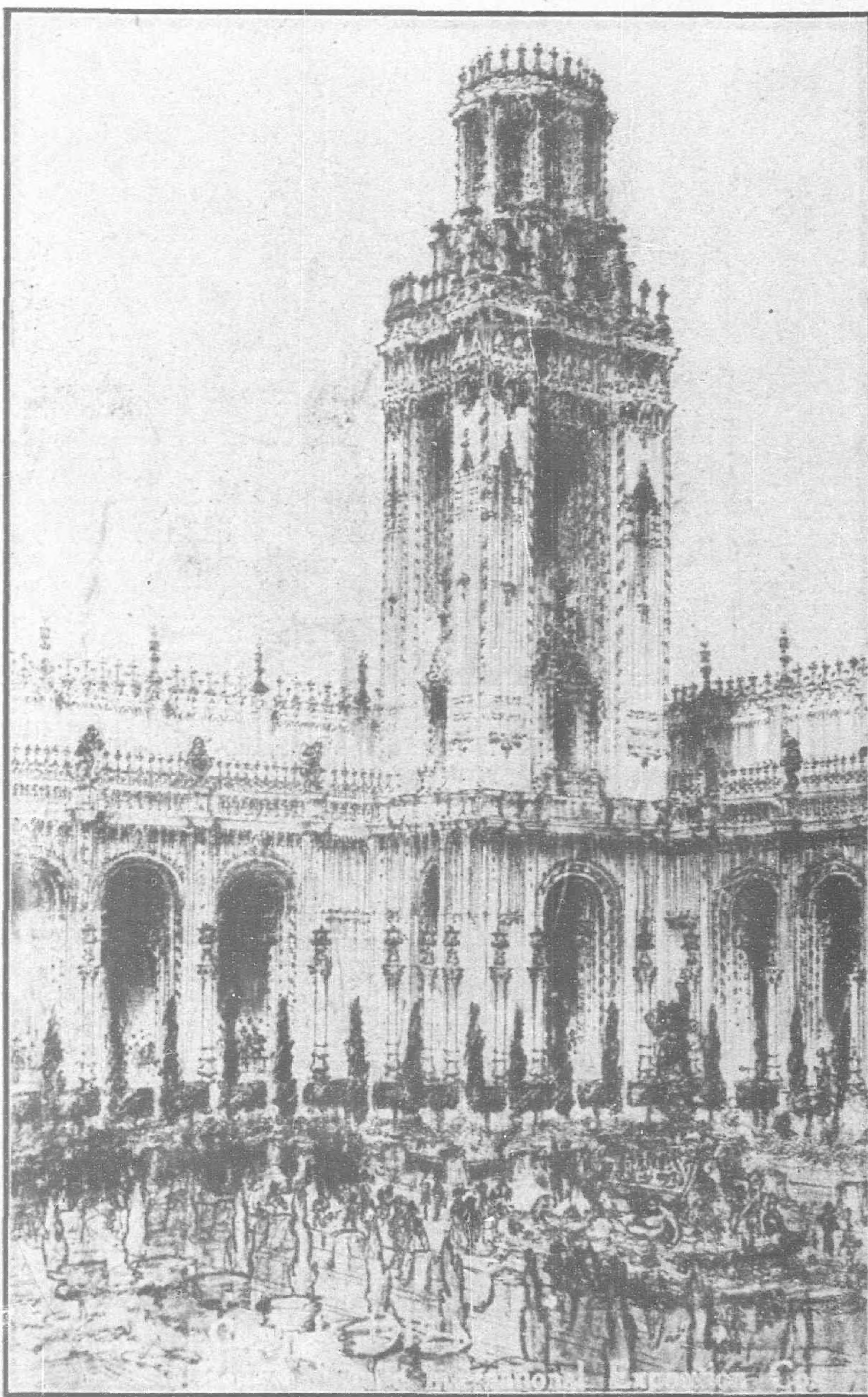
THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION

On January 31, 1911, the Congress of the United States selected San Francisco as the most desirable site for the Nation's celebration of the formal opening of the Panama Canal, which has been set for January 1, 1915. On October 14, 1911, in the presence of over 100,000 people, the President of the United States, Hon. William Howard Taft, inaugurated the preparation of this great universal celebration by turning the first spadeful of earth at San Francisco for the Panama-Pacific International Exposition in 1915. On February 2, 1912, the President of the United States issued a Proclamation announcing the holding of the Panama-Pacific International Exposition, and inviting the nations of the world to take part on a scale befitting their dignity and importance.

This Exposition will open on Saturday, February 20, 1915, and close on Saturday, December 4, 1915, running from Winter to Winter, a period of nine and one-half months.

The capital stock originally issued was \$5,000,000, divided into 500,000 shares of \$10 each, but owing to the prompt and liberal manner in which subscriptions were made the stock was increased to \$10,000,000.

To demonstrate appreciation of the honor conferred, and their ability to inaugurate, perfect, and operate an international Exposition of this magnitude, nearly three-fourths of this capital stock was subscribed by the citizens of San Francisco, but after weeding out all duplicated subscriptions and cancellations through



THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—An echo tower in the east or Festive Court at the Panama-Pacific International Exposition, San Francisco, 1915. At night the east court, with its pavements of gold, its great banks of flowers, and its lofty palms, will be flooded with light. The world's favorite melodies will be rendered by the chimes in the towers. Great saengerfests and choral festivals will be held upon the floors of the court.

death or other valid cause, the total sum remaining subscribed to October 1, 1912, was \$6,095,350, of which amount \$2,325,801.29 has actually been paid in to the Exposition. Besides the stock actually subscribed over the signatures of stockholders there are further sums pledged which aggregate \$1,453,350 that are due to become a part of the general fund.

The State of California by legislative enactment appropriated \$5,000,000; and the City of San Francisco issued bonds in the sum of \$5,000,000. These appropriations and subscriptions, aggregating \$17,500,000 in U. S. currency, form the general fund of the Panama-Pacific International Exposition Company for preparation and construction of the Exposition.

The Counties of California were authorized by the Legislature to levy a special tax upon themselves of a sum not to exceed six cents on the hundred dollars each year for five years, commencing with the year 1911. The proceeds are designed for individual participation by the other fifty-seven Counties of the State outside of San Francisco. It is expected that this fund will approximate \$3,000,000.

In addition, large sums will be expended by Foreign Countries and the States, as well as by private exhibitors from the United States and abroad. The grand total will constitute an expenditure approximating \$50,000,000.

A fair estimate of the Exposition collections shows that 38% out of a possible 45% of the subscribed stock had

been paid with very little solicitation. This is a remarkable showing when it is considered that these subscriptions are based on a five-year period, and the subscriber was permitted the option of electing whether he or she would pay their entire subscription at once, or annually, semi-annually, quarterly or monthly. In view of this fact the Exposition management fixed July 1, 1910, as the date when the first payment would be due.

When it is considered that previous American Expositions, with vigorous collection methods, have been able to collect only 90% of their subscriptions, and that the San Francisco Exposition has collected 90% with very little urging, it shows that subscriptions are coming in well.

Of the 14,000 subscribers to the Exposition fund, there are about 1,000 who have subscribed \$5,500,000. These larger subscribers are all able to pay better than smaller subscribers of five, ten or fifteen dollars each, from whom it is not expected to gain the same excellent percentage of collections.

The local management of the Exposition is entrusted to a Board of Directors thoroughly representative of the trade, commerce, banking, manufacturing, professional and civic interests of San Francisco. These thirty Directors, fully recognizing the importance of their task and the vast responsibility it entails, are devoting their intelligence and best energies to the great undertaking.

All administrative branches and Executive Divisions and Departments of the Exposition are under the authority of the President of the Corporation. The members of the Executive Committee of the Corporation and the Comptroller of the Exposition constitute the Cabinet of the President. The Executive Staff of the President consists of a Director-in-Chief, a Director of Division of Exhibits, a Director of Division of Exploitation, a Director of Division of Works, and a Director of Division of Concessions and Admissions. Under these officers, subordinate Departments for the supervision of Exhibits, of Construction, and of Maintenance are provided for, each Department having its individual head or chief. Other Executive officers may, from time to time, be appointed by the President, subject to the approval of the Board of Directors.

The President of the Panama-Pacific International Exposition is CHARLES CADWELL MOORE, President of Chas. C. Moore & Co., Engineers (Incorporated). He is also a Director in the Anglo-California Trust Company, West Coast Life Insurance Company and the California Insurance Company.

The Director-in-Chief of the Exposition is Dr. Frederick J. V. Skiff, who is also Director of the great Field Museum at Chicago. Dr. Skiff is recognized as the world's leading Exposition authority, and his knowledge and experience in this important line of work commands the attention and respect of everyone. He was the Deputy Director-General of the World's Fair at Chicago in 1893, Director-in-Chief of United States exhibits at the Paris Exposition of 1900 and Director of Exhibits at the St. Louis World's Fair in 1904.

The Division of Works has charge of the construction and maintenance of the

By June, 1914, nine months before its gates will be opened the exhibits of the world can be rolled into the spacious halls of the Exhibit Palaces in the cars in which they were loaded in distant States and from the ships which have borne them from the ports of the world.

The buildings erected by the Exposition Company are scheduled at fourteen million dollars, but this cost may be reduced somewhat, if necessary, by less elaborate ornamentation on the buildings.

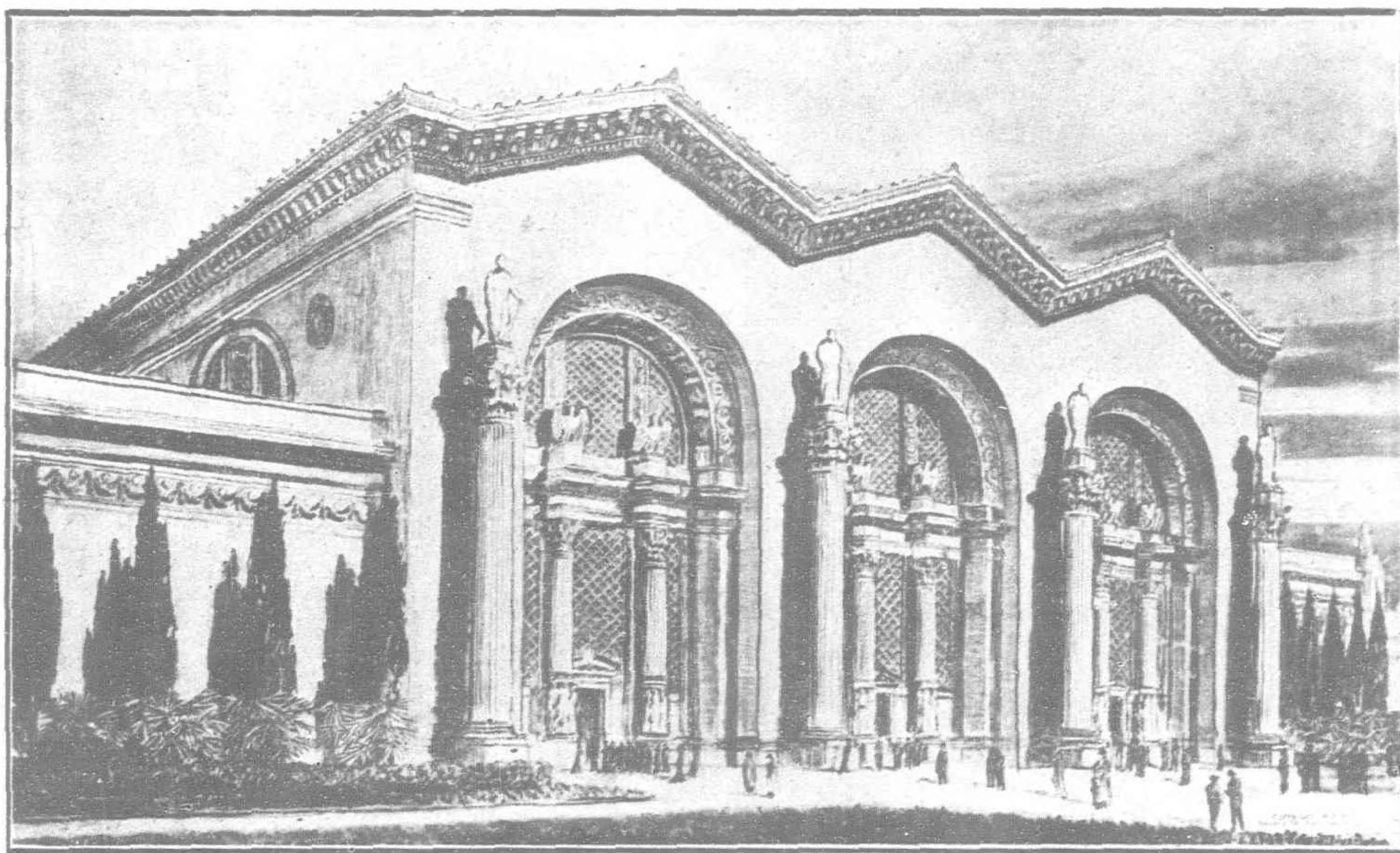
It is the purpose of this Exposition to bring together the achievements and activities of the world during the past decade for inspection and study by world experts, and for the instruction and information of all classes. The Classification is comprehensive and representative—a contemporary record of the progress of the human race—and has been reviewed by international authorities.

The Division of Exhibits is composed of eleven departments as follows: Department A—Fine Arts; Department B—Education; Department C—Social Economy; Department D—Liberal Arts; Department E—Manufactures and Varied Industries; Department F—Machinery; Department G—Transportation; Department H—Agriculture; Department I—Live Stock; Department K—Horticulture; and Department L—Mines and Metallurgy.

The Exposition will be entirely contemporaneous as far as awards are concerned, and no commercial article manufactured before 1905

will be reviewed. Secondly, though most comprehensive in classification, it will be selective rather than general—the test, one of quality rather than quantity, which, from the educational point of view, is of the utmost value to the seeker of knowledge, for it means condensation in the number of exhibits, diminution in space occupied, and conservation to the visitor of both mental and physical powers. The successful following out of such a line of policy entails of necessity an exact area estimate, and consequently it will be necessary that all applications for space shall be based on most conservative figures, stating the exact amount required for the artistic and educational presentation of the exhibit.

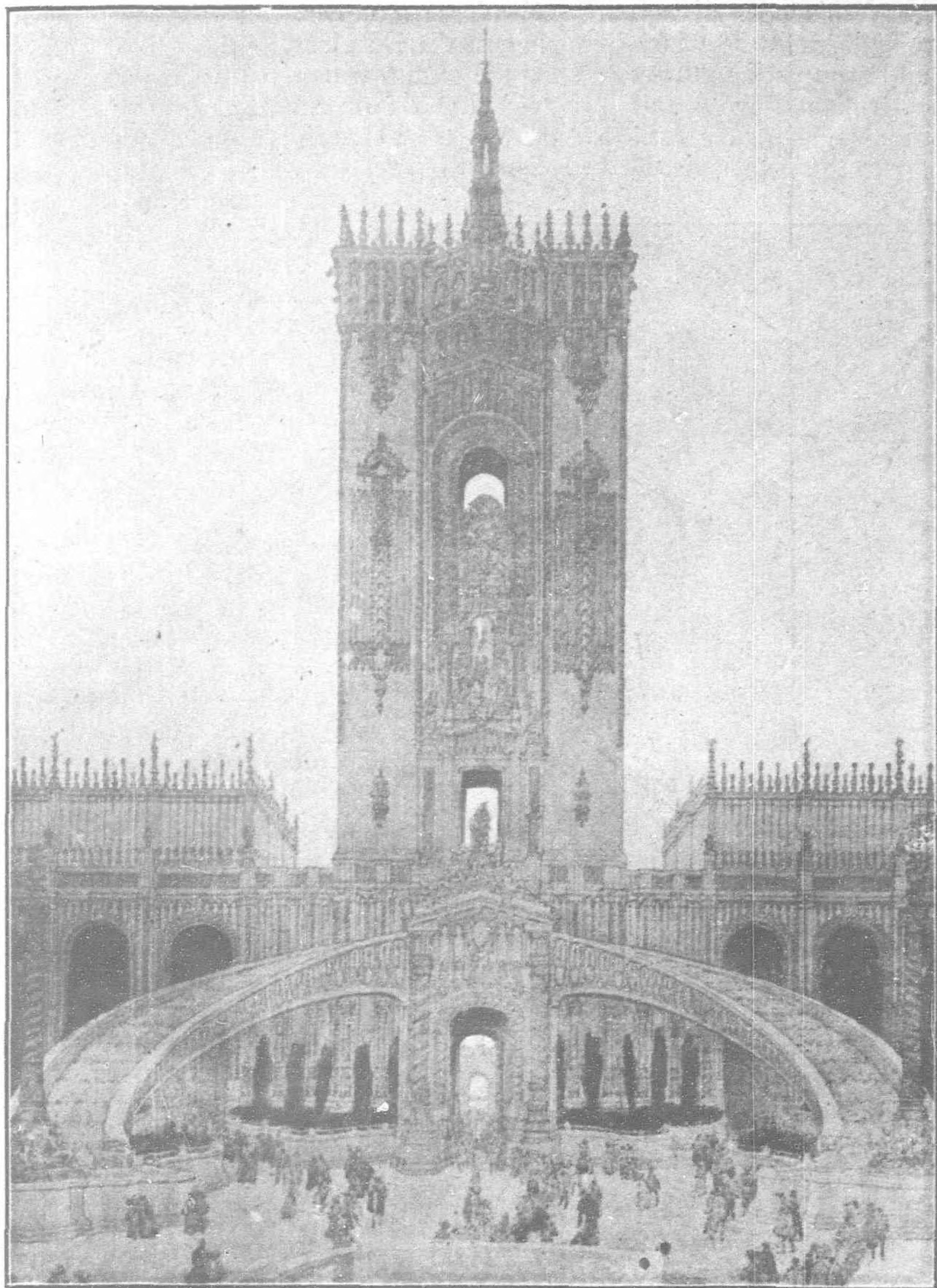
Within only nine months after issuance of President Taft's invitation—and two and one-third years before the



THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—The imposing façade of Machinery Hall, the largest building at the Panama-Pacific International Exposition, San Francisco, 1915, now under construction. The structure will be 367.8 × 997.8 feet and will be decorated with more than a mile and half of ornamental cornices. The architectural design of the building is based upon the Roman arch motif, prototypes of which may be found in the big Roman baths at Hadrian and Caracalla. The interior arrangement consists of three naves 75 feet in width, 122 feet in height and more than 900 feet long.

Buildings and Grounds of the Exposition. The Director of Works is Harris D. H. Connick, formerly Assistant City Engineer of San Francisco.

The grounds of the Exposition comprise 625 acres in the Harbor View section, forming a natural amphitheatre overlooking San Francisco Bay and its "Golden Gate" entrance from the Pacific. These grounds include part of the United States military reservations—the "Presidio" on one end and "Fort Mason" at the other. They extend over two miles on the water front and are one-half mile wide, all being naturally picturesque, particularly receptive for artistic embellishment and in harmony with the sentiment underlying the great celebration. By July, 1914—eight months before the Exposition opens—all of the main group of eleven great Exhibit Palaces will be completed.



THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—Great Cascade in the form of a staircase in the east or Festive Court at the Panama-Pacific International Exposition, San Francisco, 1915. This court will be one of three great courts dividing the central group of exposition palaces from north to south. The waters of the cascade, springing from a mysterious source, will flow into two great fountains. The court, representing the finest type of architecture of the Spanish Renaissance, is designed for pageantry upon a colossal scale. Here pageants surpassing the Durbar of India will be enacted. The great tower, 270 feet high, at the northern entrance of the court, will contain a great pipe organ with echo organs in the smaller towers. Mr. Louis C. Mullgardt, architect of the Fisheries building at the World's Columbian Exposition, is the designer of this court.

opening of the Exposition—an unprecedented record had been established by the fact that twenty-seven foreign countries and thirty-three States and Territories of the United States had signified their intention to participate. These twenty-seven foreign countries are:

Guatemala, Haiti, Salvador, Santo Domingo, Honduras, Mexico, Panama, Costa Rica, Peru, Bolivia, Japan, Ecuador, Uruguay, Canada, Liberia, France, Nicaragua, Cuba, Great Britain, China, Portugal, Chili, Holland, Germany, Spain, Brazil and Sweden.

Of these countries the following have selected their Government Pavilion site:

Japan, China, Sweden, Portugal, Canada and Holland. From assurances given, many other countries will send their acceptances soon, which insures foreign representation on a scale of

hills with varying contours rising successively from 250 to 900 feet above sea level, like the enfolding walls of a vast amphitheatre. Upon the north the site opens out up on the harbor of San Francisco. The panorama at Harbor View recalls the famous Riviera upon the shores of the Mediterranean. In the harbor before the site lies Alcatraz Island, the location of a military prison whose white walls are reflected in the waters of the bay. Beyond are the hills of Marin county rising up into the hundreds and in some instances into the thousands of feet, with Mount Tamalpais, loftiest of all, its summit often shrouded with a turban of fog upon which the sun shines as upon a vast bank of snow, as a background for the setting.

magnificence and comprehensiveness never before enjoyed at an exposition.

The Philippine Government has made an appropriation of \$250,000 gold, and appointed a Commission which has selected the Philippine Building site. Hawaii has also appointed a Commission which has selected its Building site.

The Exposition can be reached in twenty minutes from the ferry building. The site of the Exposition, at Harbor View, lies within the city limits as a crescent upon the shores of San Francisco bay, just inside the Golden Gate. No more picturesque location, nor one more appropriate to the celebration of a great maritime event, could be imagined. On the south, east and west it is encircled by towering

The central portion of the site lies slightly above the sea and is encircled on three sides by gently sloping ground; within a short distance from the boundaries of the site these slopes change to steep hillsides and thus the center becomes the floor of a huge amphitheater, from whose sides the Exposition will be seen stretched out below. To the east and south the residence section encircles the Exposition grounds, and to the west and southwest the site is embraced by the wooded slopes of the Presidio military reservation, dark with cypress and eucalyptus and interspersed with occasional vistas of green valleys.

All told the site comprises 625 acres; the Exposition buildings, built upon an east and west axis, will face upon the north; they will parallel the stream of the great incoming traffic of the world through the western gate of the United States. The harbor itself will be a part of the great theater upon which will be staged the world's jubilee and the Golden Gate will be the entrance to the theater.

A marvelous panorama will be afforded visitors on ships coming through the Golden Gate. As one looks from the harbor he will see three main groups of Exposition buildings. There will be the great central group comprising the fourteen Exposition palaces to be devoted to general exhibits; there will be the group



THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—The dominating architectural feature of the Panama-Pacific International Exposition, San Francisco, 1915, the imposing tower of the Administration building, which will lie at the south end of the Court of Sun and Stars. This tower, 400 feet in height, will be indescribably beautiful with statuary, mural paintings and mosaics; at its summit will be grouping of statuary supporting the globe typifying the world.

upon the left hand or east end devoted to amusement concessions and covering sixty-five acres; this will be the "midway." The right hand group upon the Presidio military reservation and nearest the Golden Gate will be devoted to the pavilions of the States and foreign governments.

The Exposition site at Harbor View, with its towering amphitheatre of hills and vast distances called for huge effects. The grouping of the fourteen great exhibit palaces will present this result. From afar the central group, facing for almost a mile upon San Francisco harbor, will seem as one colossal structure, a great Oriental city, with walls as high as the average six story city block, and with golden domes, towers and tower gateways rising to heights of 150, 270 and 400 feet. Nearer at hand it will be found that great inner courts lie between the buildings. Eight of the fourteen buildings in the main group will be joined in a rectangle to form almost a huge Oriental bazaar,—a veritable walled city with its domes, towers, minarets and great interior courts.

In general the buildings of the central group are to be brought into contact with those next adjoining by arcades, courts, and archways. Through this method of treatment four of the general exhibit palaces of the main group, fronting north upon San Francisco bay but set back a distance from the water's edge, will present a single architectural design. Their walls and the adjoining arches will form the main northern façade of the Exposition along the shores of the harbor, a marvelous frontage that will be first seen by visitors who reach the Exposition city by water and enter San Francisco bay through the Golden Gate. By day the glittering pillars and minarets of this mile long façade will be seen as a dream city, while by night they will reflect the sheen of a million lights into the waters of the bay.

Before the façade and along the harbor's edge for more than a mile there

will be built a great esplanade, a vast stretch of ground and terraces in which fountains will play and groups of statuary be set at intervals. Brilliant flowers and hardy flowering trees and shrubs will lend warmth and color to the esplanade.

splendors; another, on the west, will suggest the Occident, its theme exemplifying the wealth which nature has conferred upon the Saxon who has ever pushed to the West. Between these two courts will be set the greatest of all the courts, the

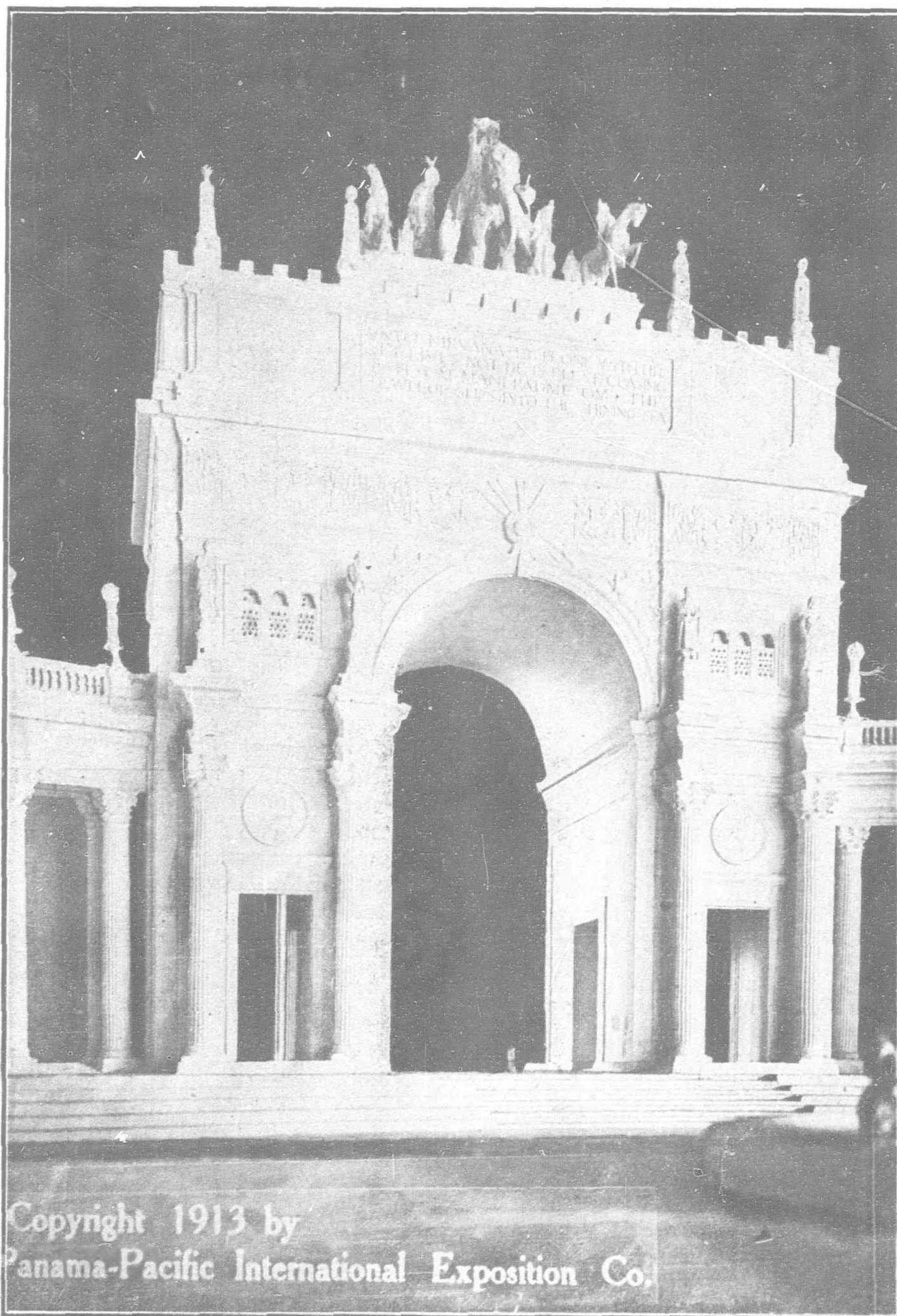
superb Court of the Sun and Stars, its theme upon a magnified scale symbolizing the union of the East and West at Panama. This court will stand out among the most brilliant architectural expressions of America and Europe. It will be distinguished by the majestic scale of its architecture; by the splendor of its conception, and by its life, color, and spirit of joyousness. The color plan of this court, as indeed of all the great courts, is designed by Jules Guérin, undoubtedly the foremost decorative artist in America.

In the courts marvelous blendings of color will be attained. Pompeian red, strong Italian blues, vermillion and orange will predominate. The roofs of the exhibit palaces will be covered with Spanish tile, a reddish pink. But from afar the sightseer will gain the effect on the blending of the various tones. Mr. Guérin gives the following word picture of his color plan for the Exposition:

"Imagine a gigantic Persian rug of soft, melting tones, with brilliant splashes here and there, spread down for a mile or more, and you may get some idea of what the Panama-Pacific Exposition will look like if viewed from a distance, say from the Sausalito heights across the Golden Gate. For San Francisco's is to be unique among the Expositions of the world in that it will be a 'City of Color.' Not that color is the chiefest value of the Exposition, for its architectural features are equally remarkable. This color plan, that of making the group of buildings a veritable blaze of glory and at the same time avoiding

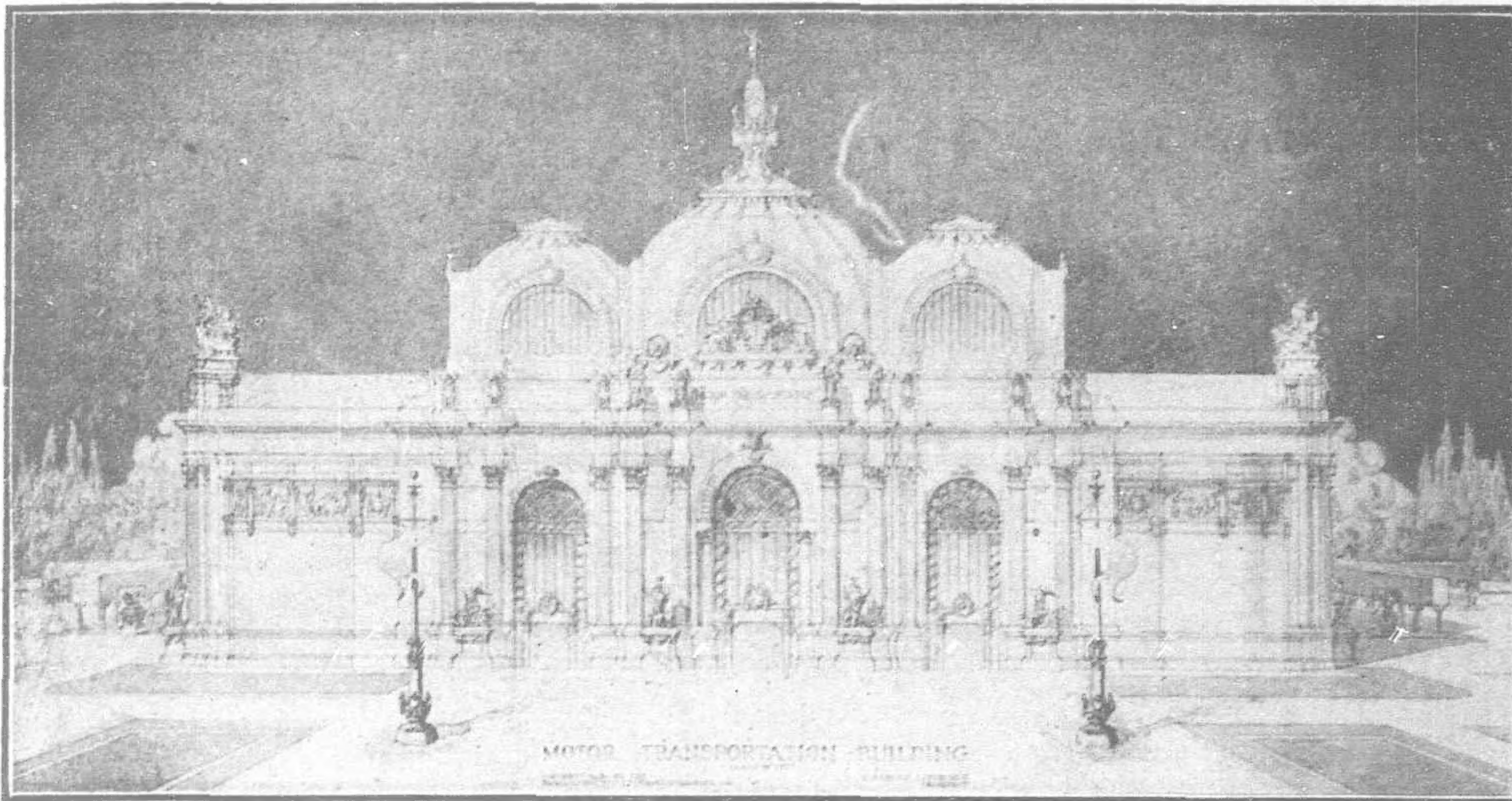
the garish or barbaric is the great new salient feature of the Exposition."

The Court of the Sun and Stars will be 750 feet in width from east to west and 900 feet along its main axis. At the south end of the court will arise the huge tower



THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION—Triumphal arch on the east side of the grand court of honor, the Court of the Sun and Stars, at the Panama-Pacific International Exposition, San Francisco, 1915. The Court of Sun and Stars in size will correspond to the place before the Cathedral of St. Peter's at Rome. This triumphal arch, larger than the Arc de Triomphe at Paris, will lead into the great east or Festive Court. The size of the arch may be judged by the fact that the height of the archway will be ninety feet. The columns of the colonnade encircling the court will be sixty feet in height; the group surmounting the arch is composed of figures symbolical of the Orient—elephants, Arab warriors and camels—the tallest figure being twenty-eight feet in height. On the opposite side of the Court of Sun and Stars will be a triumphal arch of equal size, surmounted by prairie schooners and other figures typifying the Occident. The arch upon the east and the arch upon the west will exemplify the theme of the exposition, the meeting of the East and West in the Panama Canal.

Three great courts will divide the main group of Exposition buildings from north to south. Their theme will suggest the meeting of the East and West at Panama. One of the huge courts, that on the east, will suggest the Orient, rich in Oriental



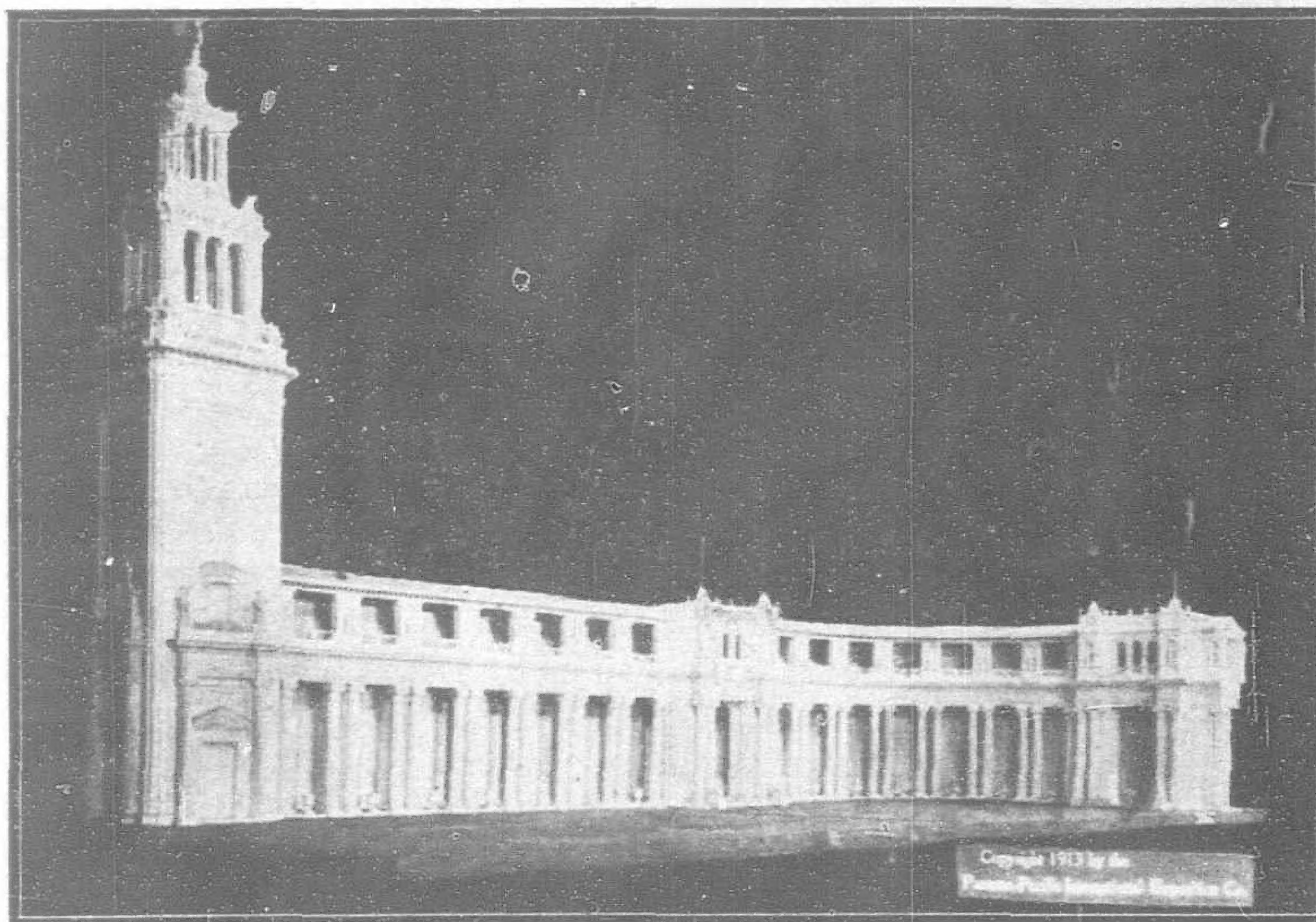
THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—The Motor Transportation Building at the Panama-Pacific International Exposition, San Francisco, 1915. This structure will be one of the largest of the exposition palaces, approximately 275 ft. front by 800 ft. deep and covering more than five acres. The theme of the architecture will be emblematic of that triumph of modern transportation,—the automobile. Groups of statuary will typify the triumph of the motor over the elements. Other groups of statuary will convey, allegorically, the victory of the motor boat over the sea and of the aeroplane over the air. On either side of the entire length of the building there will be a frieze ten feet high in base relief, giving the history of transportation from the early log-cart up to the most modern automobile. The dome which surmounts the center of the front portion of the building will be 130 feet high. Surmounting the dome will be a turret composed of the prows of motor boats, each carrying a searchlight.

of the Administration building, 400 feet in height, and dominating the architecture of the Exposition. The upper part of the tower will take the form of terraces leading up to a group of figures surrounding the globe typifying the world; the tower will be lined with jewels which will glitter like diamonds when searchlights are turned upon them. At the base of the tower, which will occupy an acre in extent, will be a huge arcade 125 feet high, beneath which the visitor may enter into the Court of Sun and Stars from the main Exposition entrance.

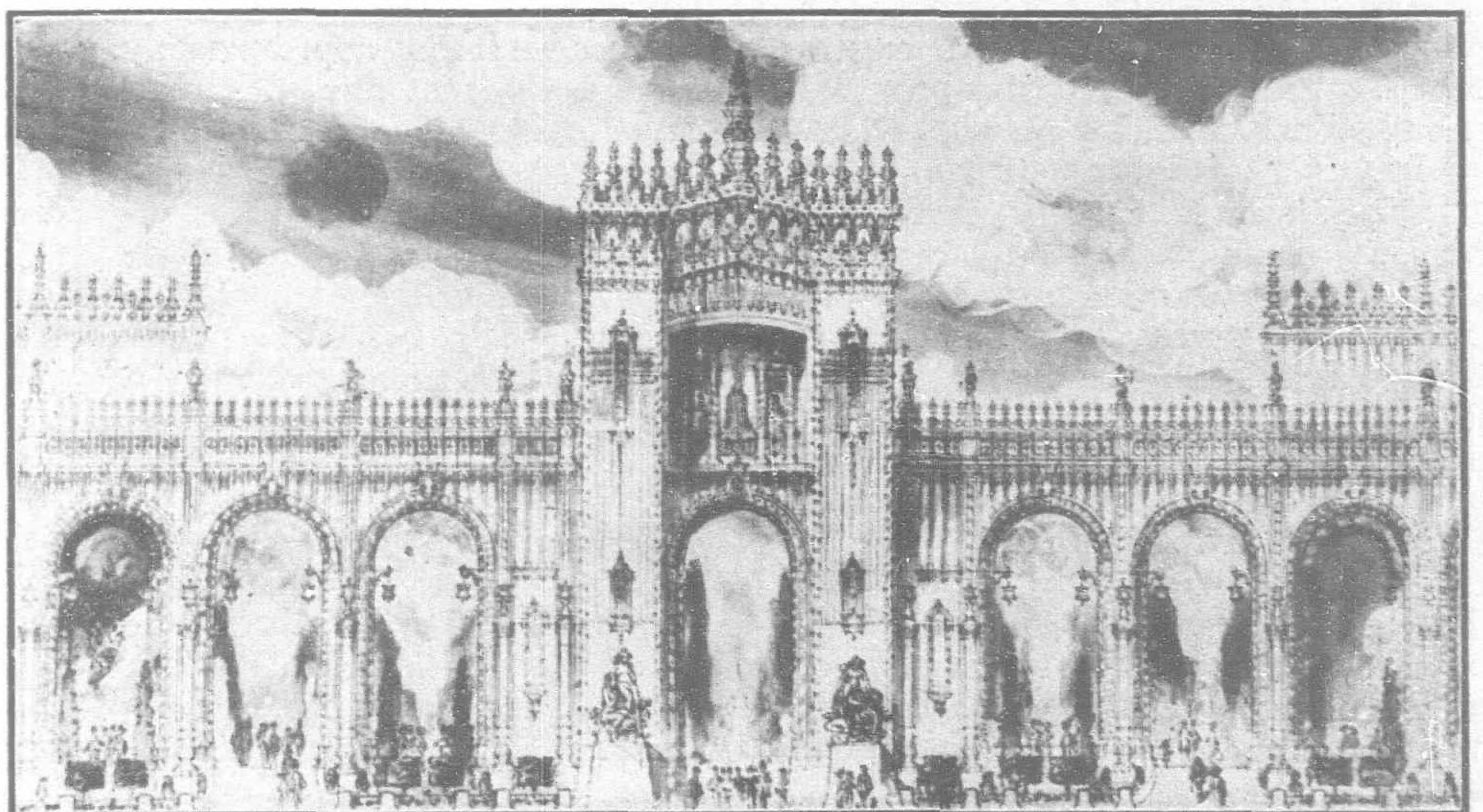
In the vaulted archways of the tower will be grouped a series of mural paintings designed by Jules Guerin and expressing the keynote of the Exposition color scheme. But perhaps the most impressive feature of the Court of Sun and Stars will be found in a classic colonnade extending entirely around the court and screening the walls of the environing Exposition palaces. The columns will be sixty feet in height; surmounting the colonnade will be a series of 110 figures symbolizing the stars. Each figure will support a huge artificial jewel four feet in diameter. At night these jewels will glitter with dazzling lights; by day their radiance will be obscured.

In the center of the court will be a great sunken garden, with benches to seat about 7,000 people surrounding the garden. In the garden will be groupings of classic statuary, dancing figures, fauns, satyrs and nymphs; flowers, trees and vines will contrast with the statuary and with the superb colonnades and the towering golden domes.

To the east as one passes from the Court of Sun and Stars to the great east or Festive Court will be a huge triumphal



THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—The marvel Court of Palms that will open out from the great exposition city upon a vast tropical garden upon the south at the Panama-Pacific International Exposition, San Francisco, 1915. This court, a marvel of tropical transplanting, is south of the Court of Four Seasons and is designed by Mr. George W. Kelham.



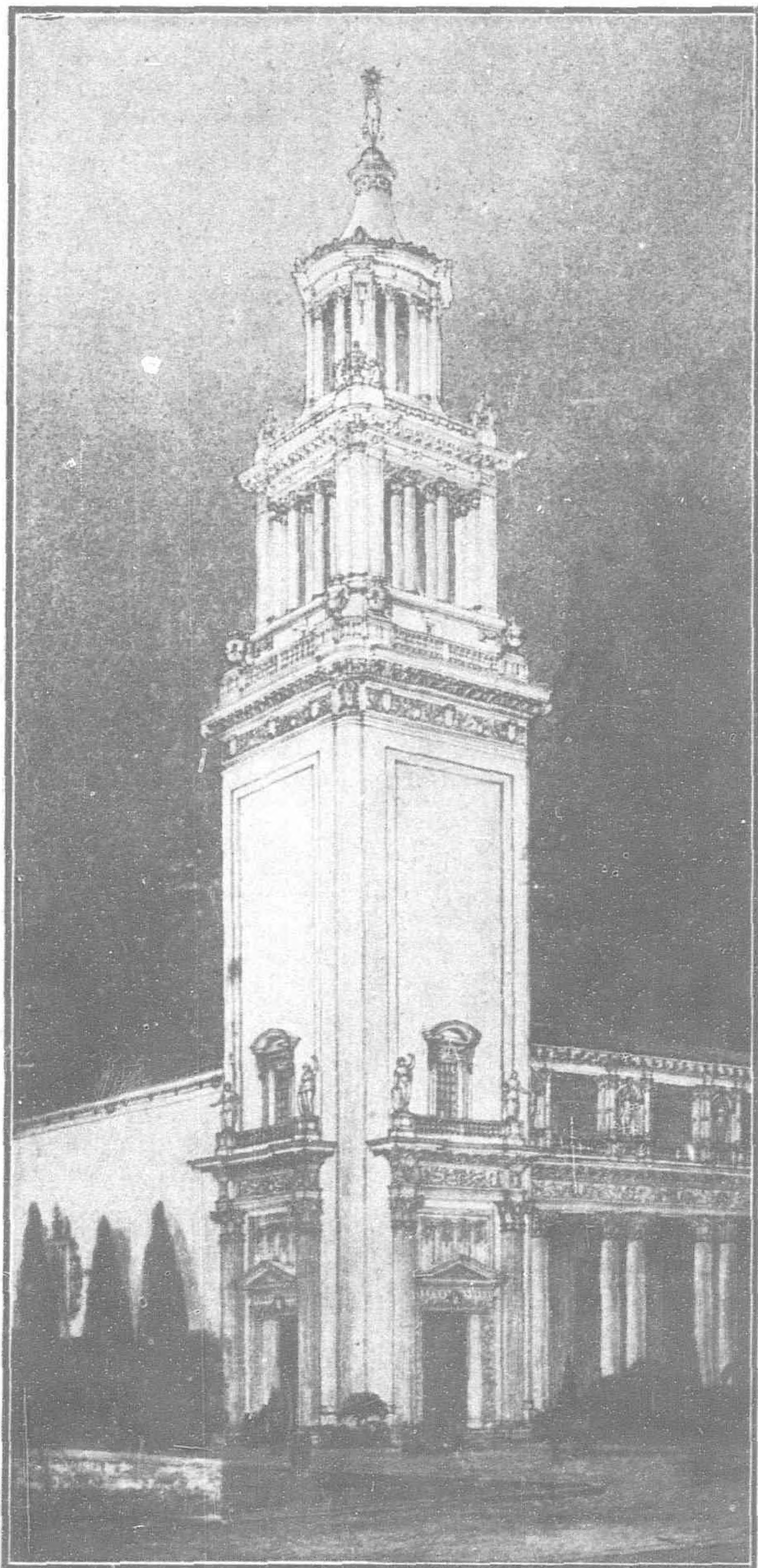
THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—Façade of the superb east or Festive Court, one of the most beautiful architectural creations of the Panama-Pacific Exposition, San Francisco, 1915. Mr. Louis C. Mullgardt, architect of the Fisheries Building at the World's Columbian Exposition in 1893, is designer of this court, which will portray the splendors of Oriental architecture.

arch 90 feet in height and surmounted by a colossal grouping of statuary; camels, elephants, and Oriental warriors will crown the summit of the great arch. To the west on the approach of the Court of Four Seasons will be a triumphal arch of similar size, surmounted by a group representing western civilization. A huge prairie schooner will comprise the central motif of the group.

The Panama-Pacific International Exposition has attained a stage of development never before equalled at an American Exposition. With simultaneous construction being undertaken on all parts of the grounds, with thousands of men at work, and with the nations of the world giving their heartiest support to America, a marvel city will swing open its gates on February 20, 1915, upon a series of world displays which in quality, interest, usefulness, education and magnificence will never have been surpassed.

We are indebted to Mr. G. H. Corse, Jr., General Passenger Agent of the San Francisco Overland Routes, comprising the Pacific Mail Steamship Co., Southern Pacific and San Fe Railroads and their eastern connections, for the following information in regard to the progress of the enormous work that is incidental to the opening of the Fair.

Director of Concessions Frank Burt announces that the Committee on Concessions and Admissions has just granted the right to Jacob, Adolph & Mervyn Gunzendorfer to produce their original and remarkable concession "The Submarine" at the Fair. It will cost \$150,000 and bids fair to interest thousands of visitors. It will be an amusing riding device that will afford the public an original, sensational experience and also demonstrate the utilization of the submarine for observation and other purposes. Steel submarine boats will dive into a great lake in which will be assembled startling and unique forms of vegetation and



THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—One of the superb Italian towers that will mark the approach to the Court of Palms at the Panama-Pacific International Exposition, San Francisco, 1915. There will be two of these courts, identical in size, one south of the Court of Four Seasons and one south of the Festive Court, which will be known as the Court of Flowers.

animal life brought from the submarine continents of the world. The passengers will be comfortably seated and provided with individual portholes through which they may behold forests of coral and pearl beds, sponge gardens, seaweeds, specimens of unique fish and an almost endless variety of marine creatures in their native environment. The concession will be contracted into a large lake occupying an oblong site 200 × 300 feet in area and 12 feet at its greatest depth, yet by the manipulation of registering dials which record 10 feet for every one foot of actual submersion and by the use of mechanical screens which are caused to move upward as the boat is going down, the passenger will actually feel that he is diving some three hundred feet.

According to Director of Concessions Frank Burt, more than 24 concessions

have already been granted by the 1915 Exposition. Of this number some of the leading attractions will expend \$1,505,-

000.00 in preparing for the entertainment of thousands of visitors who are coming to the Panama-Pacific International Exposition. Following is a part list:—

NAME	CONCESSION	AMOUNT TO BE INVESTED.
Remington Typewriter Co.	Public Stenographic Booths	\$150,000.00
Santa Fe Railroad	Grand Canyon of Arizona	250,000.00
Drs. Couney & Fischel	Infant Incubators	25,000.00
L. E. Myers	Panama Canal	150,000.00
L. E. Myers	Panamanian Souvenirs	25,000.00
Dale, Davis & Lewis	'49 Camp.	100,000.00
Orange Blossom	California Candies	10,000.00
Patrick Brothers	Ice Palace & Hockey Arena	150,000.00
Pacific Aeroscope Co.	Aeroscope	100,000.00
Marcel Glessinger	Trianon	60,000.00
E. W. McConnell	Creation	160,000.00
E. W. McConnell	Evolution of the Dreadnought	150,000.00
E. W. McConnell	Cyclorama Battle of Gettysburg	25,000.00
E. W. McConnell	Human Roulette	16,000.00
L. A. Thompson	Racing Coaster	60,000.00
L. A. Thompson	Scenic Railway	60,000.00
C. L. Sept	The Old Mill	15,000.00

Permission has been granted by the Panama-Pacific International Exposition to the National Association of Automobile manufacturers to erect a motor transportation building on the 1915 Exposition site. This structure is to house the most attractive automobile show ever held in the world, and which is to last through the entire period of the International World's Fair. The design of this building is one of the most modern notes in the composition of the Exposition, and harmonizes admirably with the general classic lines established by the Architectural Commission. In this building the process of manufacture and assembling will be shown and the importance and extent of this great industry will be placed before the world. This structure will be one of the

largest of the Exposition Palaces. It is approximately 275 feet front by 800 feet deep, covering somewhat over five acres.

Official announcement has just been made by the State Department to President Moore of the Exposition that the Government of Argentine Republic has decided to participate in the Exposition and is organizing an exhibit on an elaborate scale and will make a large appropriation for its participation. The Exposition officials are elated, as it means that South America will be well represented at the 1915 World's Fair. Every central American country has accepted the President's invitation and the fact

that Argentine Republic will take part means that other countries of South America will follow her example.

There was something rather poetic about the term "The Middle Kingdom," but the "Middle Republic" would sound ridiculous, says a Kobe paper. Many picturesque antiquities are destroyed in the making of a republic. On the Eastern Chinese Railway the mail coaches used to bear the painted inscription "Middle Flowery Kingdom." This has now disappeared in favour of "Communications Department of Great China." It is reported that great indignation is felt at the change. It is singular that the infant monarch should have been disposed of so light-heartedly, but that so much value should be attached to the royal name of his domains.



THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.—Chinese Commissioners reviewing troops during dedication ceremonies for China's site, October 24, 1912.

DUTCH EAST INDIES RAILWAYS

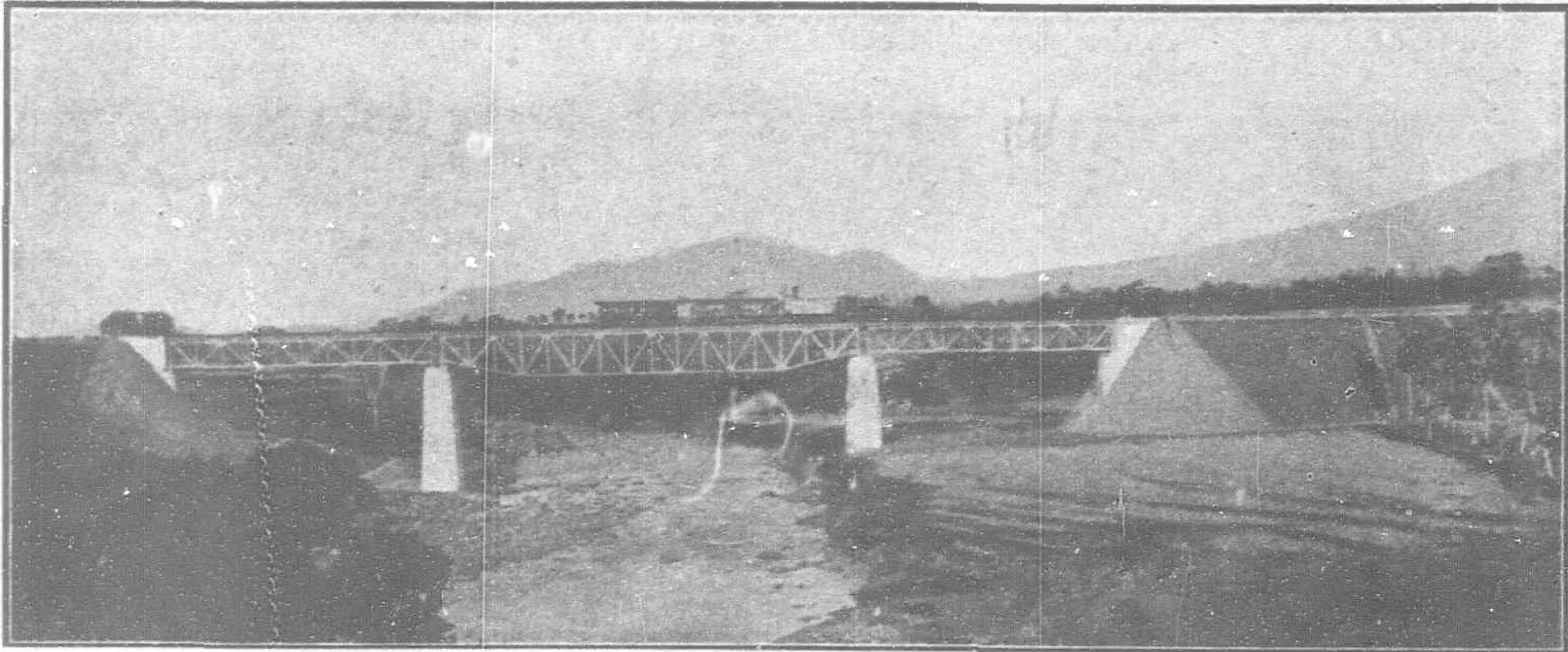
A LESSON IN STATE MANAGEMENT

To those who are interested in the never-ending discussion on the relative merits of State or private ownership of railways, authentic information in regard to the State Railways in Netherlands-India will be of interest. We are indebted to the excellent report of Commercial Agent D. C. Alexander for the facts and figures given in the accompanying article.

The State Railways of the Dutch East Indies are under one general management, with head offices at Batavia, but they are operated in four divisions, as follows: West Java line, 641 miles in length and the construction of which cost \$37,267,473 United States currency; East Java line, 598 miles long and costing \$29,361,332; West Coast of Sumatra line, 152 miles long and costing \$9,092,629; and the Tykampek-Tylamaja tram line, 38 miles long and costing \$99,940. This gives a total cost of \$75,821,374. All these are of the Dutch Indies standard gauge (1.067 meters or 3 feet 6 inches.) In addition, the State owns and operates 17 miles of 60 centimeter (23.62-inch) gauge steam tram lines, which serve as feeders for the main lines.

As references to the steam tram lines must frequently be made in this and other reports on Java, it may be stated that many of the steam tram lines in Java can hardly be distinguished from railways proper. Most of them had their origin as narrow-gauge city tram lines carrying passengers only; but they have been extended from town to town, their gauge widened heavy rails laid, and freight and parcels service added. Up to the present time steam traction has been exclusively employed on these lines, but to-day most of them are planning to substitute electric traction for steam, the power, in many cases, to be obtained from hydroelectric plants.

The following tables on passenger service and earnings indicate not only the density of traffic on the State Railways and the substantial net earnings, but also the steady increase in both, which is the justification for the heavy outlay for extensions and improvements now being made and for those about to be begun. In the past extensions and improvements have not kept pace with increasing traffic, but the railway administration is now fully awake to the necessities of the situation, and has adopted comprehensive plans for expansion and betterment. The most important step in this direction is the recent decision of the Dutch Government to begin at once the construction of the Middle Sumatra Railway, a line which will extend through the whole length of the island of Sumatra. Another step



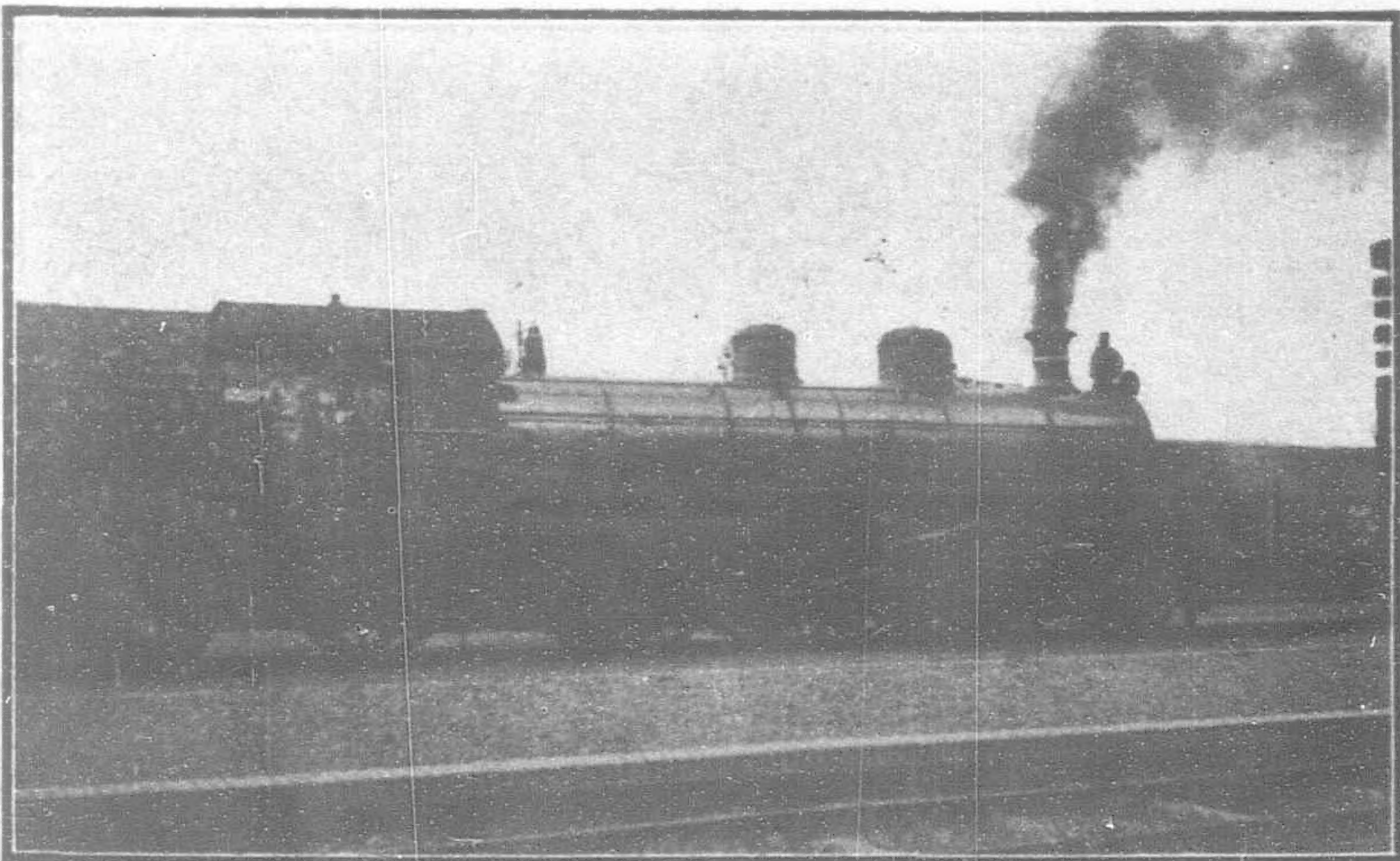
DUTCH EAST INDIES RAILWAYS.—Bridge over the Progo River near Djohja

report United States currency is used.

	1900	1909	1910
Total passengers carried.....		25,597,241	27,102,836
Gross revenue from passenger and freight traffic...	\$5,251,110	\$8,283,044	\$9,333,065
Net earnings for the year	\$2,340,960	\$3,392,290	\$4,308,059
Percentage of net earnings to capital cost.....		4.58	5.73

The equipment of locomotives and rolling stock at the end of 1910 was as follows:

Lines.	Locomotives.	Passenger coaches.	Goods wagons.
West Java line.....	205	98	3,498
East Java line.....	189	576	3,777
West Sumatra line.....	65	74	634
Tykampek-Tylamaja tram line.....	2	12	21
Total.....	461	760	7,930



DUTCH EAST INDIES RAILWAYS.—One of the recently imported locomotives for the Eastern Division.

is the purchase, very recently concluded, of a privately owned line from Batavia to Buitenzorg, 35 miles in length and of the Dutch Indies standard gauge; while a third step will have been taken by the end of 1914, when there will be opened for traffic in the west of Java three branch lines, aggregating about 160 miles.

TRAFFIC, EARNINGS, AND EQUIPMENT

The following table shows the traffic and earnings during the years 1900, 1909, and 1910. In this table and throughout the entire

TYPE AND MANUFACTURE OF LOCOMOTIVES

On the West line, where the grades are heavy, the locomotives in use are correspondingly large and powerful, there being now in service 16 Mallet-Rimrott compounds of 0-4 and 4-2, weighing 32½ metric tons each; 23 Mallet-Rimrott compounds of 2-6 and 6-0, weighing from 45.7 to 46.3 metric tons each without tenders. The latest locomotives imported for the West line are 10 of the Pacific type, each having a weight, empty and without tender, of 47 metric tons. As these give a speed of 40 miles per hour on a 5 per cent. grade, with 300 metric tons load, and as they have been found more economical in operation and repair cost, it is probable that this type will supplant the Mallets. The railway officials have recently ordered several 2-12-2 locomotives for express

service. On the West line, trestle construction has been largely employed to avoid heavy cuts and fills.

On the East line, where the grades are comparatively light, both freight and passenger service are maintained by compound tank engines of 2-6-0; and tender locomotives of 4-4-0 and 2-4-0. Sixty-five per cent. of the locomotives in use on the Java State railways are of German manufacture, 23 per cent. British, and only 5 per cent. have been built in the Netherlands. On the East Coast of Sumatra line all of the 65 locomotives are of German manufacture.

All passenger coaches now in use have been built in Java, only wheels, axles, and bogies have been imported. Sixty-five per cent. of all the freight cars in use are the closed two-axle goods wagons. A few of this type are built on bogies, and are double the length of the ordinary wagon; but the smaller car, with a capacity of 12 tons, has been found more satisfactory. These cars, with the exception of the wooden floors, are usually purchased from European builders and shipped "knocked down" to Java, where they are easily assembled. The price of the small car delivered in Java is said to be from \$320 to \$330 each.

Six repair shops are maintained in Java for the State railways. These are situated at Bandeong, Madioen, Soerabaya, Mt. Cornelis, Djember, and Poermoredjo; but only the first three named are of sufficient size to deserve detailed description. The main shop for the West Java line being the largest, will be considered first.

BANDEONG WORKS

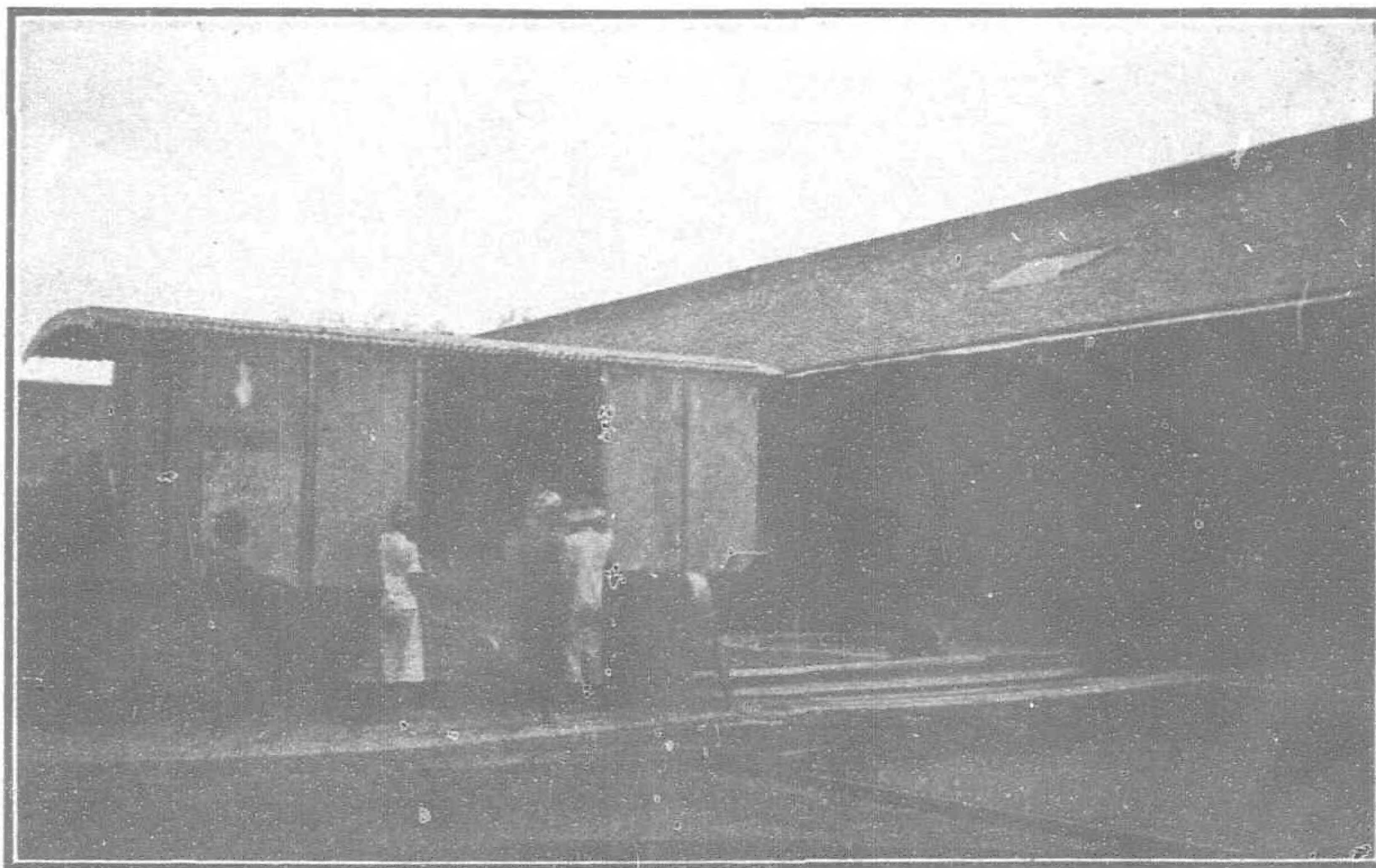
As each branch of the work in the Bandeong shops is rigorously separated from the other branches, there are in all some 16 buildings, which are in eight parallel rows. Each of four transfer tracks thus serves four buildings, all of which are left open on one side for the rail lines to enter. A rail line also traverses the length of the yard, dividing the buildings into two groups of eight. For a tropical country this arrangement seems an excellent one.

Power is obtained from a hydroelectric plant a few miles away. This power station, like many others in Java, has been built by a private company; but by the terms of the company's charter the Government retains a considerable measure of control and must approve the rates at which power is to be sold. In this case the rate is \$1.60 per horsepower per month, the shops taking about 300 horsepower in all. Current is transmitted from the power station as 3-phase, 50-cycle, at 6,000 volts, which is transformed at the shops to 220 volts alternating current. A 13½-kilowatt direct-current dynamo, driven by an alternating current motor, lights the shops at a voltage of 230. In this connection it may be said that practically all of the motors and other electrical apparatus now installed in and ordered for the shops at Bandeong, Madioen, and Soerabaya are from a single German company, which appears to have a virtual monopoly of the electrical supply business in Java.

FORGE AND BLACKSMITH SHOP—WHEEL SHOP

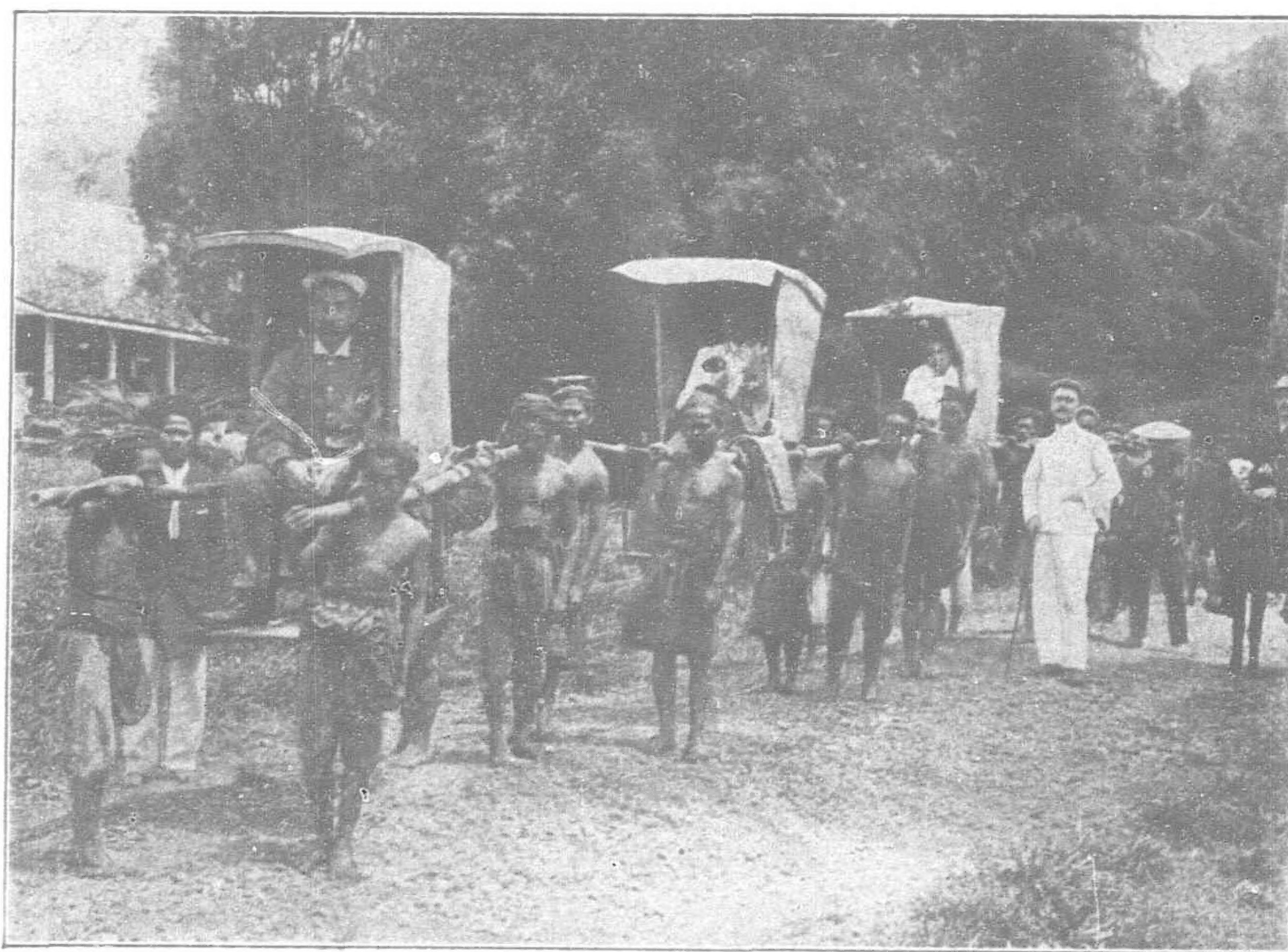
The forge and blacksmith shops at Bandeong and Madioen are the cleanest and most

orderly the writer has ever seen. All of the fires (there are 45 at Bandeong) are completely hooded and connected with an underground brick-lined tunnel, with an exhaust fan driven by a 40-horsepower motor at the base of the stack. The absence of the usual litter of iron, tools, etc., from the floor may result from the workmen's consideration of their own bare feet; but the clean windows, fresh paint, and general absence of grime and disorder are a tribute to the proverbial orderliness of the Dutch.



DUTCH EAST INDIES RAILWAYS.—A 12-ton goods wagon used principally for transporting sugar.

The hammer equipment of the shop includes three steam hammers of 2, 5, and 8 hundredweight; and a new Yeakley motor-pneumatic hammer of 1 hundredweight from Bêche & Crohs, of Hückeswagen, Germany. The combined punching and shearing machine is from the Werkzeugmaschinenfabrik, of Chemnitz; and the spring-testing machine from Möhr & Federhaff, of Mannheim, Germany.



Sedan Chairs in Java

The boiler shop is served by a 15-ton electric traveling crane, built by the Harlem (Holland) Maschinenfabrik; and the equipment includes a 20-foot plate planer from the Niles Tools Works, of Hamilton, Ohio; three cold saws and a plate straightener, from Gustav Wagner, of Rutlingen, Germany; and a 30-millimeter plate shear, also of German make. Compressed air is not used in any part of the works, the management having found that the Javanese workman are not strong enough to use air hammers properly. Consequently

all riveting, calking, chipping is done by hand. Some electric drills are in use, however.

The foundry contains three cupolas; two with a capacity of 13 hundredweight per hour each; and a new one with a capacity of 2 tons per hour. One of the old cupolas is of the Herbert removable bottom type, with steam ejector, but this has not been found altogether satisfactory. There are four Piat brass furnaces, each with a capacity of 130 pounds; but no molding machines have thus far been installed.

All of the lathes in the wheel shop are from the Chemnitzer Werkzeugmaschinenfabrik of Chemnitz, Germany, successors to the firm of Joh. Zimmermann. As their machines are usually referred to as Zimmermann's, that name will be used throughout this report. The largest of the five lathes swings 6 feet, which is ample, since the largest locomotive drive wheels in use are only 150 centimeters (4.92 feet) in diameter. Wheels for freight and passenger cars are uniformly 74 centimeters (29.13 inches) in diameter, and both the chilled-iron and steelbody type are in use. The newest wheel lathe, which has four tool rests, swing 1 meter; and another of the same size but more powerful design has been ordered from the Maschinenfabrik Deutschland, of Dortmund, Germany, for high speed turning with gang and formed cutters. There are four radial drills in this shop; three of German and one of British make.

MAIN MACHINE SHOP

The equipment of the main machine shop is about equally divided between American and German machine tool builders, with a few British builders represented. Most of the German machines are from either the Zimmermann shops, or from the Sachische Maschinenfabrik of Chemnitz, successors to Richard Hartmann. They are usually known as Hartmann's machines and will be so called in this report.

The predominance of these two makers among the German tools in the shop is said to be due to the fact that a majority of the locomotives in use on the Java railways have been built by these two firms, and that tools for repairing them were "naturally bought from the makers of the locomotives." The American machines now installed are:

The American Tool and Machine Co., of Boston: One turret lathe (2 inches brought headstock) with thread-chasing attachment.

Hendey Machine Co., of Torrington, Conn.: Three 12-inch engine lathes, with taper attachment and compound tool rest, but with European style of tool post.

Hamilton Machine Tool Co., of Hamilton, Ohio: Two 22-inch upright drills.

Automatic Machine Co., of Bridgeport, Conn.: One automatic lathe with 10-inch swing.

Landis Tool Co., of Waynesboro, Pa.: Two plain grinders, one about 8 by 30 inches, and one 24 by 72 inches; one surface grinder, table 10 by 36 inches; four 1½-inch single head bolt cutters.

Becker-Brainard Milling Machine Co., of Hyde Park, Conn.: One No. 5 vertical milling machine.

Cincinnati Milling Machine Co.: One No. 1 plain horizontal milling machine.

Warner & Swasey Co., Cleveland, Ohio: One No. 2 hollow hexagonal turret lathe.

Gisholt Machine Co., of Madison, Wis.: One universal tool and cutter grinder.

Shaper of American make, 14-inch, from which the maker's name has been removed.

Of British machines there are only a vertical surface grinder, with oscillating feed, from Beyer, Peacock & Co. (used principally for grinding side rods and guide bars); one of Geo. Richards's open-side planers, in which the arm carrying the cutting tool travels over the work; and a single head-bolt cutter from Kendall & Gent.

The Hartmann machines include four gap lathes, swinging 22 to 30 inches over the bed; several upright drills, one horizontal cylinder boring and facing machine; a 6-foot plain radial drill; and a twist drill grinder. Larger machines from the same maker are one 4-foot 6-inch surfacing lathe, and a new gap lathe, swinging 48 inches over the bed and taking 16 feet between centers.

From the Zimmermann shops there are three small horizontal plain milling machines; one large vertical milling machine, with spindle 3 inches in diameter; three single-ram and one double-ram traverse shapers; a small planer with one head; a 15-inch profiling slotter; and a couple of upright drills. A 10-inch precision lathe has recently been ordered for this shop from W. von Pittler, of Germany, but has not yet arrived.

A lathe from H. Wohlenberg, of Hanover, Germany, was pointed out as having a feature worthy of consideration by American makers. In this machine the carriage is guided by shears on the side instead of the top of the bed. This arrangement is said to prevent the wear which usually occurs from chips falling into the "V's," thus keeping the lathe in alignment for a longer period.

WOODWORKING AND CAR-BUILDING SHOP.

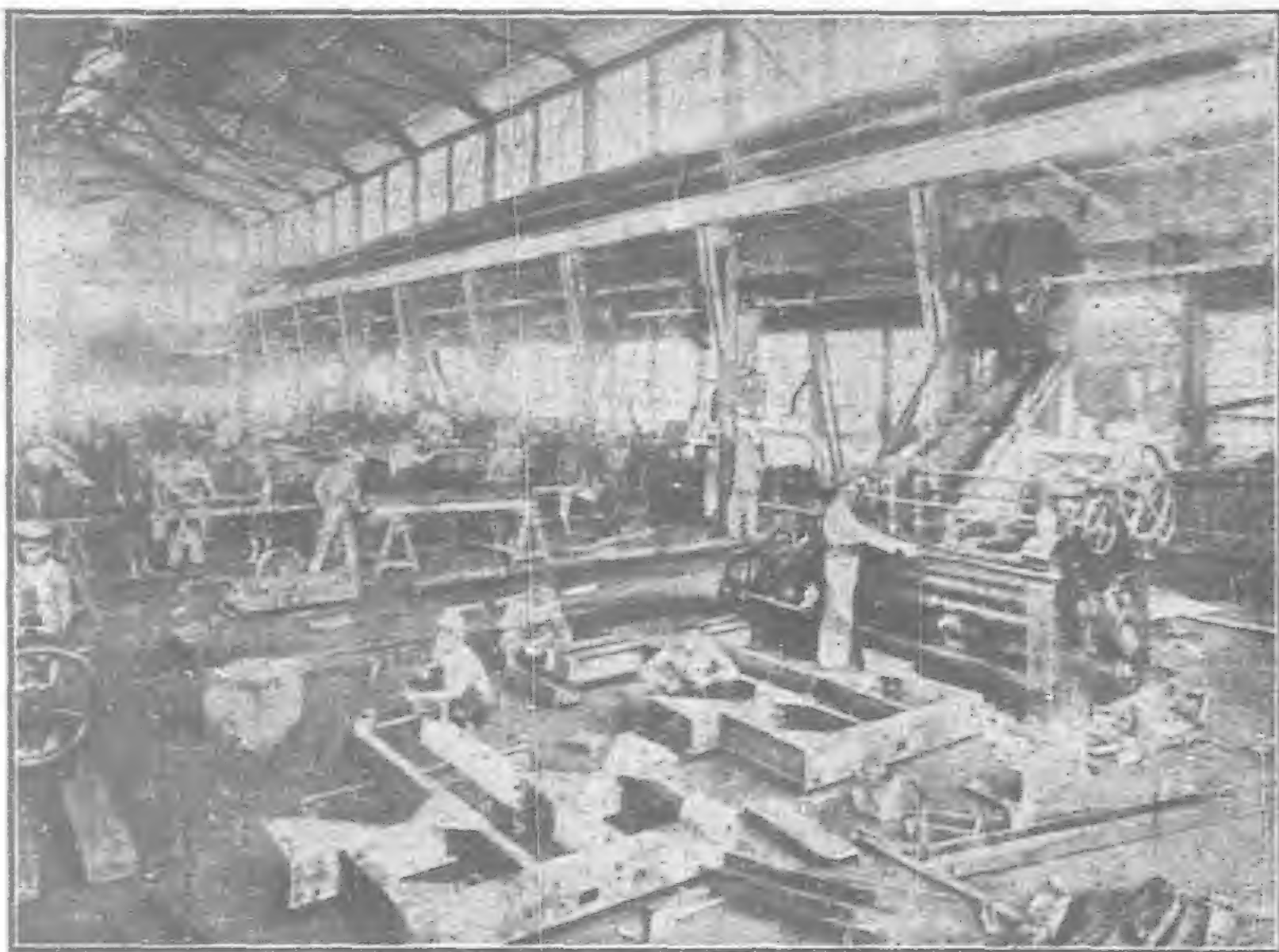
The equipment of the woodworking and car-building shop is not equal to that of the other shops in the works, most of the machines being old and many quite out of date. A large majority of the machines are from Perin & Panhard of Paris, France, or Panhard & Lavassor, of the same city. The same firm has supplied three surfacing planers, a tenoning machine, a two-spindle drill, a hollow chisel mortising machine, and two vertical band saws. Three large frame saws are from Panhard & Lavassor, and a horizontal plank-ripping band saw is from the shops of Pickles & Son, of Headen Bridge, England. The more modern machines are a chain mortising machine from the New Britain Machine Co., of New Britain, Conn.; and from T. Robinson & Son, of Rochdale, England, an automatic-feed triple-drum sander, and a tenoning machine.

The wood principally used for car building is Java teak, which is noted for its durability and works easily. As this wood has advanced in price within recent years to 21 cents per cubic foot, other varieties of Java and Sumatra woods are now being introduced into car building.

In all, about 1,500 men are employed in the Bandoeng shops, all of whom are Javanese except 75 to 100 Chinese carpenters and pattern makers. For woodworking the Chinese have been found much more efficient than the Javanese, and their wages are correspondingly higher. Carpenters receive from 50 cents to \$1 per day; smiths about the same; foundrymen, 24 to 60 cents; boilermakers, 32 to 80 cents; machine-tool men, 32 cents to \$1; painters, 32 to 60 cents; and coolies, 16 to 20 cents.

MADIOEN SHOPS.

The Madioen shops execute most of the repairs for the East Java line,



DUTCH EAST INDIES RAILWAYS.—State Railway Workshops at Bandoeng.

though, as will be mentioned later, the shops at Soerabaya are now being extended to handle a part of this work. Very large extensions are being made to the Madioen shops; the old buildings are being remodeled and many new ones erected. While not so compact as the Bandoeng works, the general arrangement at Madioen is much the same. The rail lines enter the workshops from the sides, four transferers serving to connect the different buildings.

The present power is generated by a couple of simple engines of 50 horsepower each from Stork Bros., of Hengelo, Holland; but a hydroelectric plant is now being built a few miles away which will supply 500 horsepower to the shops, current to be transmitted at 6,600 volts, 3 phase, which will be transformed to

230 volts alternating current in the works. As a reserve, a 450-horsepower steam engine has been ordered from the firm of R. Wolf, of Magdeburg, Germany. This is to be of the usual Wolf design, the engine mounted upon the boiler and with the fire tubes secured only to the boiler head, so that they, with the head, can be withdrawn from the barrel for cleaning and repairs. While such an arrangement might be satisfactory in a 50-horsepower unit, it does not seem likely that it could prove so in a 450-horsepower unit.

The new forge and blacksmith shop, which is to be 272 feet long by 59 feet wide, will have 64 fires, as against 28 at present, the general design being practically the same as that of the Bandoeng shop. Forges, blowers, and fans have been ordered from the Sturtevant Engineering Co., of London, and three Yeakley motor-pneumatic hammers of 2, 5, and 10 hundred-weight, respectively, will be installed.

The new foundry, which is to be only slightly smaller than the smith shop, will have a 10-ton rope crane, two cupolas, each with a capacity of $1\frac{1}{2}$ tons per hour, and five Piat brass furnaces, each to handle 220 pounds. Three small hand-power molding machines are also to be installed. These, though ordered through a German firm, are believed to be of American manufacture.

The reconstructed boiler shop is to have an almost entirely new equipment, which will include a 20-ton electric traveling crane from the Benrath Works, of Dusseldorf, Germany; an 18-foot plate planer, and two 6-foot universal radial drills from the Niles Tool Works, of Hamilton, Ohio; bending and straightening rolls from the Zimmermann shops; combined punching and shearing machine with 8-horsepower motor, from the Stahlwerk Oeking, of Dusseldorf; and a large pipe bending machine from Sauer & Co., of Germany. The only old machines which will be retained are several radial and upright drills.

MACHINE SHOP.

It is interesting to note that while the present equipment of machine tools is almost entirely German, most of the tools ordered for the new shop are of American make. There are now from the Zimmermann shops two 4-foot plain radials, two small universal milling machines, a small wheel press, and a slotter. From the Hartmann shops there are a vertical milling machine, a slotter, two planers, and several small lathes, including a turret lathe with 12-inch swing. Two wheel lathes, each swinging 6 feet, are from the Vulcan Works, of Chemnitz; and there are also two 5-foot surfacing lathes from Ernst Schiess, of Germany. The other German makers represented are Brewer, of Kalk, with a two-ram traverse shaper; J. E. Reinecker, of Chemnitz, with a plain grinder 8 by 30 inches; and Grafenstaden, with a couple of small capstan lathes.

The only American machines now in use are two small shapers from the American Tool Works, of Cincinnati; and a plain grinder (12 by 72 inches) from the Landis Tool Co., of Waynesboro, Pa. The only British machine on the floor is a vertical surface grinder from Beyer, Peacock & Co., of Manchester.

Of the new machines ordered for this shop the following are American: One No. 3 vertical milling machine, from the Cincinnati Milling Machine Co.; one No. 3 universal milling machine, from Kearney & Trecker Co., of Milwaukee; one 5-foot universal radial drill, from the Niles Tool Works, of Hamilton, Ohio; two 2-inch bolt cutters (said to be of



A Javanese Money Changer

Landis make though ordered through a German firm); two 12-inch shapers, from the American Tool Works, of Cincinnati; a slotter, with 10½-inch stroke, from the Niles-Bement-Pond Co., of New York; a small turret lathe, from the Warner & Swasey Co., of Cleveland; two Rockford upright drills; and a universal tool grinder, from the Gisholt Machine Co., of Madison, Wis.

One of Geo. Richard's Co., of (Manchester, England) open-side planers has been ordered; and a precision lathe, duplicate of the one ordered for the Bandeong shops, is to come from W. von Pittler, of Germany. The price of the latter machine, which swings 10 inches and takes 24 inches between centers, is said to be \$1,030. A new high speed lathe for turning locomotive tires has been purchased from the Maschinenfabrik Deutschland, of Dortmund, at a price of \$3,800. This lathe, which will swing 6 feet and is to be used with gang and formed cutters, will be driven by a 25-horsepower motor, which, however, is not included in the price. Another order which has gone to Germany is for a nickel-plating plant, to be supplied by the Langbein Works, of Leipzig.

WOODWORKING AND CAR-BUILDING SHOP.

All the woodworking machines now in use are from the Paris firm of Perrin and Panhard, except an automatic frame-saw grinder from a German firm. The French machines include two frame saws, two circular-saw benches, a mortising machine, and a couple of planers and shapers. All of the new machines for this shop have been ordered from the Bolinders factory, of Stockholm, Sweden, which will supply five log-sawing machines, five circular Saw benches, five molding machines (of different sizes and types), and mortising and tenoning machines.

When the new shops are completed and the new tools installed about 2,000 hands will be employed, as against 1,200 at present. Labor conditions are practically the same here as at Bandeong, and wages are about the same.

SOERABAYA SHOPS.

The shops at Soerabaya, which are small and badly arranged, are soon to be transferred from their present location at Soerabaya-Kotta to a new site at Soerabaya-Gobeng, where new buildings are now being erected. The new works, though much smaller, will greatly resemble the Bandeong shops both in general layout and in the design of buildings, and large provision is being made for extensions when they may be required.

Although the works managers realize that most of the old machines should be scrapped rather than moved, it has been decided, since the new shops are to be so much larger than the old, to transfer nearly all of them, but with the intention of replacing them with new machines as soon as possible. These old machines include one or two traverse shapers and several upright and radial drills from such British makers as J. Whitworth, Appleby Bros., and Wayne & Co.; and a number of lathes, drills, and milling machines from German makers—De Fries, Zimmermann, Hartmann, and Reinecker. The only modern machines in the present shop are a 16-inch engine lathe, from Schumacher and Boye, of Cincinnati; and a double-headed bolt cutter, from the Landis Tool Co., both of which were much complimented.

A majority of the new machines are, it is said, to be of American make, though in many instances the works managers do not know the exact maker, since nearly all of the new machines have been selected from German catalogues, issued by German firms which state frankly that they endeavor to conceal from their customers the names of the makers whose machines they supply. Among the machines which the German agents have sold the railway as American made (but maker's name not disclosed) are two high-speed drills, two shapers, four high-speed lathes, and a vertical milling machine.

The known American machines are two Rockford upright drills, one turret lathe from Warner & Swasey, two plain grinders from the Gisholt Machine Co., a twist drill grinder from Manning, Maxwell & Moore, and a slotter from the Niles-Bement-Pond Co.

The new machines ordered from European makers include an open-side planer from George Richards, a plain milling machine from J. E. Reinecker, a slow-speed cold saw from Gustav Wagner, and two high-speed wheel lathes from the Maschinenfabrik Deutschland. The latter are to be similar in design to the lathe ordered from the same company for the Madioen shops, but somewhat smaller in size.

As it is expected that the Soerabaya shops will be occupied with light repair work rather than heavy repairs to locomotives or car building, the woodworking shops will be very small, and the new foundry will have but one cupola, with a capacity of only 1½ tons per hour, and only two brass furnaces to melt 190 pounds each. The forge and smith shops likewise will be much smaller than those at Bandeong and Madioen, as there will be only 44 fires and three power hammers. Two of the latter, from the old shop, are steam driven, while the third is a new Yeakley motor-pneumatic of 3 hundredweight.

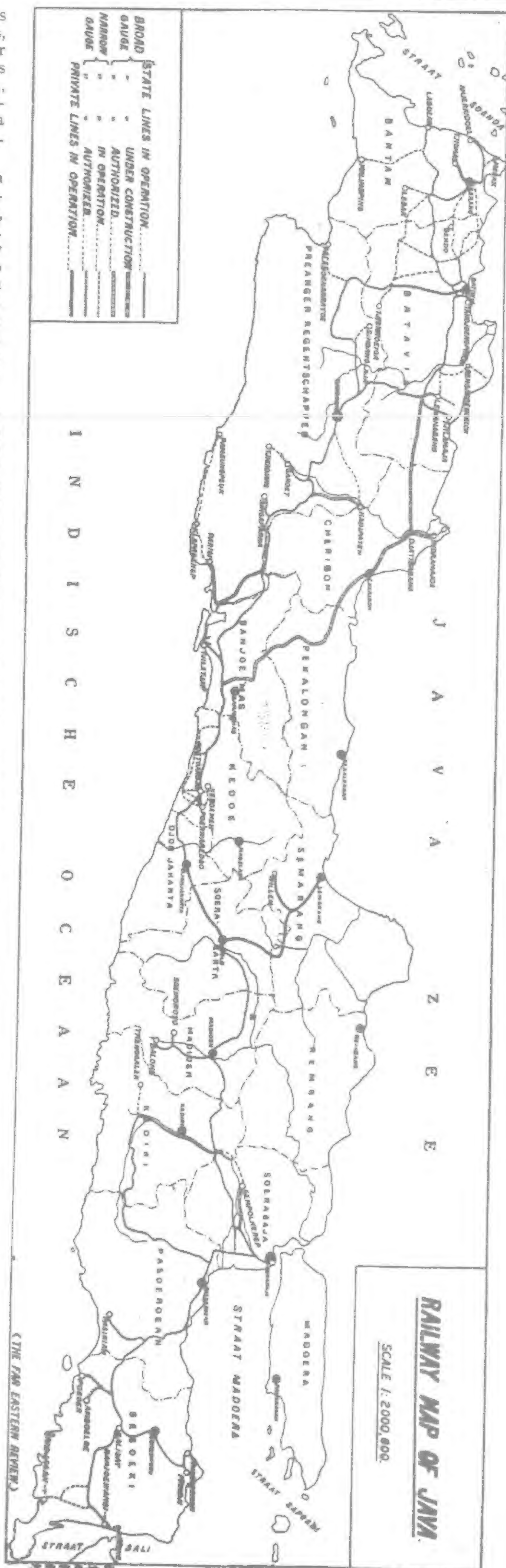
Wages in the Soerabaya shops average somewhat higher than in Bandeong or Madioen, but seldom exceed the maximum rates paid in those shops.

In Java railway trains are not operated at night—that is, from 7 p.m. to 5 a.m. Therefore very little provision is made for lighting passenger coaches. An acetylene plant has recently been installed, however, at Bandeong, which has a capacity of 15 tubes per day, compressed to 220 pounds per square inch; and acetylene lighting apparatus is being substituted for oil lamps in the cars of the through trains.

JAPANESE STATE MONOPOLIES

Official figures just published by the Japanese Monopoly Bureaus show that the approximate net profit from the monopolies for the last fiscal year amounted to Y.65,978,176, an increase of Y.3,845,764 on the estimates, and of Y.2,642,077 on the actual net profits for the preceding fiscal year.

It must be remembered that much of this so-called "profit" is indirect taxation, for which the State monopoly system affords a convenient medium for collection.



THE IMPORTANCE OF THE MINING INDUSTRY TO CHINA

BY F. L. COLE, MINING ENGINEER,
SHANGHAI, CHINA.

With the advent of the change of government in China and the evident desire for progress along modern industrial lines, the exploitation of the mineral resources and the making of regulations to govern such exploitation comprise some of the most interesting problems which the new government must take in hand.

As an evidence of the importance of the mineral products to a country, the following quotation from "The Business of Mining," by Arthur J. Hoskin, is an interesting example: "In the United

States in 1900 the census returns showed that agriculture produced about \$725 (gold) per capita, mining \$1,910 and manufacturing which is dependant upon the others \$760. The *National Banker* has said statistics show that the combined dividends paid by the gold and silver mining companies of the United States are greater than the combined dividends paid by all the banking institutions of the country, and the combined dividends paid by the copper mining companies of the U. S. exceed the combined dividends paid by our railroads."

The following tables of statistics from the 1912 statistical number of "The Engineering and Mining Journal" show the production of metals and mineral and chemical substances in the U. S. for the past three years:

PRODUCTION OF METALS IN THE UNITED STATES

Metal	Unit	1910	1911	1912
Copper (a)	pounds	1,086,249,983	1,083,856,371	1,242,836,024
Ferromanganese	long tons	224,431	184,717	202,186
Gold (b)	dollars	96,269,100	96,890,000	91,685,168
Iron	long tons	27,079,136	23,464,627	29,445,068
Lead (c)	short tons	392,704	400,958	418,224
Nickel (e)	pounds	32,050,032	29,545,967	33,311,233
Quicksilver	flasks	22,418	21,500	(f) 25,147
Silver (b)	troy ounces	57,137,900	60,399,400	62,369,901
Zinc (d)	short tons	277,065	295,836	347,922

(a) Production from ore originating in the United States. (b) The statistics for 1910 and 1911 are the final and those for 1912 are the preliminary statistics reported by the director of the Mint. (c) Production of refined lead from ore and scrap originating in the United States; antimonial lead is included. (d) Total production of smelters, except those treating dross and junk exclusively; includes spelter derived from imported ore. (e) Imports for 1912, first 10 months only. This nickel is refined in the United States for the production of metal, oxide and salts. (f) As reported by U. S. Geological Survey.

PRODUCTION OF MINERAL AND CHEMICAL SUBSTANCES

Substance	Unit	1910	1911	1912
Arsenic	pounds	3,052,000	6,162,000	5,852,000
Coal, anthracite (b)	short tons	82,670,235	492,647,863	511,964,403
Coal, bituminous (b)	short tons	411,126,408	402,121,307	427,655,966
Coke (b)	short tons	36,056,059	34,972,534	41,803,199
Copper sulphate	pounds	26,356,788	33,454,000	39,480,741
Iron ore	long tons	53,267,397	41,878,190	59,485,477
Petroleum	barrels	210,588,308	218,372,850	218,970,815
Tungsten ore	short tons	2,130	1,139	(c) 1,290

(b) All coal and coke statistics are the estimates of *Coal Age*. (c) As reported by the U. S. Geological Survey.

While the definite information available at present does not show that China is possessed of as favorable precious metal deposits as the United States, there is every reason to believe that these deposits are of great value and that in coal and iron, which have made the basis of the greatest industries of the U. S. and England, China is as well or better supplied as those countries. Coal occurs in nearly every province, and in quality it compares favorably with that of any country. Striking examples of the demand for coal and the possibilities of its development are that a large part of the coal on the Shanghai market is from Japan and that Japanese coal is sold in Hankow, 600 miles from tidewater and five days from Japan. Hankow is in the heart of the Chinese coal fields with a railroad tapping good coal within 359

miles, not to mention the water routes which offer nearer and cheaper transportation from other fields.

The Kaiping, Fushun, Pinghsiang and other collieries show what can be done with intelligent application of capital. Each of these and some others had hard struggles to enable them to start operations, not from the lack of financial success, but from the official and other interference and indifference.

There are opportunities for many more such companies, and the Yangtze valley should become to China what the Pittsburg and Sheffield regions are to the U. S. and England.

Mining is strictly a legitimate business and there is a minimum chance for failures if it is undertaken rightly.

The popular idea is that a mine is a hole in the ground which can produce

lucrative royalties and ready cash at any time. This is unfortunately not the case, and the fact that considerable investment is necessary before any returns are forthcoming and that every day in the life of a mine is one day nearer its point of exhaustion, makes it necessary that larger profits should be won than in most any other business and that favorable conditions for obtaining these profits should exist.

Every dollar spent in and around a mine means that the most of that dollar goes toward the benefit of the labor employed and to the vendors of local supplies and consequently for the benefit of the community at large and for the increase of local tax revenue to the government.

One only has to visit any of the producing mines in China to note the general prosperity of the community and the cheerful and satisfied appearance of the inhabitants.

Chinese merchants have hitherto not become interested in mining except in a small way and in certain favored districts where the value of the business was recognised by the officials and the royalties regulated accordingly.

Regulations to promote mining which will attract capital must be drawn with the object of giving the investor an unhampered fair chance with as little government supervision as possible. Revenue to the government should be collected only on the output of the property, as every dollar spent by the investor in investigating and developing a property adds to the prosperity of the region in which the money is spent, and until a property is producing it should not be hampered by taxes and royalties.

Investments in mining are made either in proved properties or because of the indications of value in a property, and it does not follow that an investor will receive more than a fair profit from the investment commensurate with the risk involved.

There is hardly any business which calls for more careful investigation and careful initial expenditure and more skilled technical supervision than mining, and there is probably no business in which more failures are recorded on account of the lack of careful investigation and of over confidence.

Most of the famous precious metal mines in the world have been started from small beginnings by poor men, and every facility should be given the discoverer and small capitalist to exercise their rights of discovery by assisting them in their enterprises by liberal regulations.

There seems to be a lure about mining which causes men to take chances which they would not take in their own or in any other business. This is impossible to regulate, but a government can regulate the placing of shares on the market by companies which have no foundation to their claims to having valuable and workable mineral deposits.

(Continued on page 12)

THE DEVELOPMENT OF RAILWAYS

In view of the remarkable interest being displayed in China in regard to railway matters, it is of interest and value to record what is transpiring elsewhere, especially in countries where conditions are largely similar. The following article is from the *Rangoon Times*:—If any justification were required for the proposition that a bold forward policy in the matter of railway development in this Empire is certain to yield a handsome return upon the outlay involved, it would be found in the remarkable results detailed by Sir T. R. Wynne in his statement to the Imperial Legislative Council. The figures are convincing enough even for the most sceptical, and show that judicious expenditure under this head always more than repays itself. Taking a period extending over sixteen years from 1896-97 to 1912-13, during the first eight years of this period of progress, receipts rose by 11 crores; during the second period they rose by 21½ crores or for the whole period by 32½ crores. This result is the best proof that could be put forward of the truth of the contention so often made in these columns that a policy of vigorous railway development in Burma would not only greatly advance the interests of the Province, but would yield splendid profits. In particular, the long-proposed project of a line connecting Burma with China—which is one of the most pressing of Provincial needs—ought to be brought out of the pigeonhole where it is becoming dust-covered, and reconsidered in the light of the facts and figures quoted by Sir T. R. Wynne. We are very glad to see that the Chambers of Commerce of Manchester and Liverpool are about to bring pressure to bear upon the Secretary of State with that object, and we sincerely trust that they may be able to induce him to re-open the question, which has dropped out of view since Lord Curzon of Kedleston's suggestion that the merchants of Burma should provide the funds required for the construction of the proposed line. We entertain no doubt that the money would be forthcoming promptly if the Government of India followed the example set by the Dominion of Canada in offering land concessions along the route in return for the financial help required. That such a railway is needed cannot be disputed, that it would pay well is equally certain; that its cost could be easily provided on suitable terms does not admit of doubt. The political difficulties in connection with the suggested line have undergone considerable modification within the last few years, and all that is now wanted is a bold policy on the part of the Railway Board.

The Burma Railways Company, Limited, is an enterprising concern and is under exceptionally able management, but it is hampered by the action of the Railway Board, which in its turn reflects the attitude of the Government of India. We know that the Railway Board is alternately accused of extravagance and of parsimonious neglect, but the former is neither required nor desired in the case of this Province. The traffic returns of the Burma Railways last year bear eloquent and conclusive testimony to the advantages of a forward policy. The number of passengers carried on the main line and the Pegu-Moulmein and Henzada-Kyaungin extensions was 23,966,266, an increase of over two millions as compared with the previous year. The gross earnings rose to Rs. 211.76 lakhs and the working expenditure to Rs. 130.47 lakhs, leaving a net profit of Rs. 81.29 lakhs, an increase of 9½ lakhs on the figures for 1910-11. Both on the main line and on the extensions the percentage of expenses to earnings fell, and the percentage of earnings to capital outlay everywhere increased. Figures like these are very satisfactory in themselves and amply warrant the belief that if further extensions were undertaken—and especially if the construction of the through connection to China were placed in the hands of the Burma Railways Company—the financial and com-

mercial benefit to this Province would be enormous.

There are, of course, other directions in which railway development is necessary in Burma, and it is gratifying to know that the matter is not being neglected, even if progress be slow. In the Tenasserim Division surveys have been sanctioned from Ye to Tavoy, from Tavoy to Amya via Myitta, from Moulmein to Three Pagodas, and from Ye to Three Pagodas. Then, also, considerable advance is being made in the construction work on the Southern Shan States Railway and if sufficient funds are forthcoming it is anticipated that the line will probably be opened up to Aungmye at the 72nd mile in the spring of 1914. Reports on the projected Ta-Hapali-Nampai Nyaunglebin-Madauk and Nyaunglebin-Pado Railways were received last year, but it is not proposed to proceed with the projects at present. The Local Government recommended the construction of the Pyinmana-Myinbyin, and Alon-Saingbyin lines, reports for which were also received, but there is no early prospect of the Railway Board being able to provide the necessary funds. This is disheartening, but as we have said, if the Government of India will only be a little more liberal, and be not quite so grasping in wanting everything for itself and will consider the economic interests of investors, it can readily obtain all the money needed to inaugurate a vigorous policy of railway development.

MODERN PORT FOR SAKHALIN.

Mr. P. M. de Friedlander, the English capitalist, who is largely interested in East Siberian mining concessions and more particularly in coal mines and petroleum oil wells in the Russian section of Sakhalin, has received very welcome tidings that the Tsar has approved of certain plans submitted by him for the construction of a harbor at Alexandrovsk, on the northwestern coast of the island. Mr. de Friedlander was originally requested to prepare these plans by the Governor of Sakhalin and the Governor-General of the Priamurye, Master-of-the-horse Gondatti, and the actual work of drafting them was entrusted by him to Messrs. Hawkshaw and Dobson of Millbank House, London, who executed the task in a most efficient and elaborate manner. The plans were ready in 1911, but various formalities were necessary before they could be acted upon. Following the Tsar's approval, they were submitted to a committee which was convened last summer during Governor-General Gondatti's visit to St. Petersburg, and were duly accepted. Work on the new harbor will commence forthwith.

The importance of the projected enterprise from an economic standpoint can scarcely be exaggerated. The effect of creating an up-to-date port at Alexandrovsk will be to open up an almost fabulously rich coal bearing country in the hinterland, which in turn will revolutionize the entire coal trade of the Far East. Not only is the quantity of coal available enormous, and capable of being easily mined, but its quality has been recognized by experts as fully equal to the best Cardiff steam coal. Hitherto the business of mining this coal has been carried on in a very desultory manner, the absence of a harbor on the west coast and the consequent difficulty in shipment having constituted the most serious obstacle to successful development in the past. In the opinion of the British Consul at Vladivostok once these obstacles can be overcome by the construction of an artificial harbor, the industry should have a good future.

A great prospective market for the Sakhalin coal is the Maritime Province of East Siberia, which in 1910 imported 41,852 tons from China and 34,146 tons from Japan, the principal purchasers being the Government departments and the Ussuri Railway. It should be easy for this high-class Sakhalin coal to oust all foreign coals from the coals from the above market,

and also to take the place for private and industrial use of local coal.

But the prospective market for Sakhalin coal, when the new harbor is ready, need not be restricted to Russian territory, for in the opinion of experts, it should be possible to lay down this coal at, say, Yokohama at a rate per ton considerably lower than that asked for Japanese coal which, moreover, is of decidedly inferior quality. Indeed the demand for Sakhalin coal hereafter from steamship companies doing business in these waters bids fair to be enormous.

Mr. de Friedlander states that the natural condition for a harbor at Alexandrovsk are in every respect excellent. The average depth of water at low tide is 47 feet, with a rise of about six feet at high tide. Mr. de Friedlander naturally feels gratified that his plans should have been given the preference over those of anybody else, and looks forward with confidence to the future progress of Russian Sakhalin in the wake of this important projected improvement.

THE IMPORTANCE OF THE MINING INDUSTRY TO CHINA

(Continued from the previous page)

In countries where the government gives investors much aid and information through their geological surveys, by building roads and giving similar assistance, investors will naturally be willing to pay higher royalties and taxes, as their contributions are indirectly spent for the benefit of the mining industry.

There is probably no country in the world to-day of which so little general and detailed information about its mineral resources is available as China and the present time is most opportune for the inauguration of a practical and business like geological survey which would have for its objects the study of the known mineral districts and the publication of results. In many cases the study of the occurrence of coal and oil would lead to the discovery of further deposits and to the great advantage of the country at large.

Furthermore, the great advantage to the country of the detailed topographic maps necessary for the study of its geology would be that these maps could be used for the purposes of irrigation, reclamation, railway and transportation routes, agricultural and forestry development, military and many other uses which would repay the government many times over for the original cost.

No one who has travelled in China but is impressed with the possibilities for its development, and no one who admires the Chinese doubts that they will achieve a stable government on modern lines. For the new government there is no work of greater benefit to the country than the intelligent promoting of the development of its mineral resources.

THE FAR EASTERN REVIEW

COMMERCE :: ENGINEERING :: FINANCE

GEO. BRONSON REA, M.E.

PUBLISHER

W. H. DONALD, Editor

5 JINKEE ROAD,
SHANGHAI,
CHINA

A Monthly Review of Far Eastern Trade, Finance
and Engineering, Dedicated to the Industrial
Development and Advancement of Trade in
the Philippines and Far Eastern Countries

MANILA OFFICE: PLAZA GOITI,

Wm. CROZIER, Manager

UNITED STATES

J. ROLAND KAY CO.

Teutonic Building, Chicago

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SUBSCRIPTION RATES: Philippines, United
States, Canada, and Mexico, \$2.50 U. S. C. per year.
To all other countries in the Postal Union, Mex.
\$7.00 per year, postage \$2 Mex. extra. Single
copies 25 cents, U. S. C. or 75 cents, Mex.

ADVERTISING RATES will be mailed on applica-
tion.

ENTERED AT THE U. S. POSTAL AGENCY,
SHANGHAI, CHINA, AS SECOND
CLASS MATTER

SHANGHAI AND MANILA, JUNE, 1913

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THE PROPOSED MONGOLIAN AGREEMENT

When the last issue of the FAR EASTERN REVIEW went to press the House of Representatives at Peking was considering the proposed agreement between China and Russia regarding Mongolia. Among the members of the House considerable feeling was shown, and there was strong criticism of what was described as the "high-handed action of Russia," in trying to obtain from China something which she ought not to grant, and to which Russia was not entitled.

The House discussed the matter in secret session, and after argument extending over two sittings proposed certain modifications to the agreement—modifications which it is not likely the Russians will accept.

The agreement submitted to the House consisted of six articles, and embodied the Urga Protocol* with a few immaterial alterations. The proposed agreement is as follows:

China and Russia with the object of obviating misapprehensions which might possibly arise from the present situation in Mongolia have agreed upon the following stipulations:

- 1—Russia recognises Mongolia to be an integral part of the territory of China and hereby explicitly undertakes not to seek to interrupt the continuity of its territorial integrity: Russia further undertakes to respect China's rights of every description which heretofore have existed in consequence of this territorial integrity.
- 2—China undertakes not to change the system of local self-government which has hitherto existed in Mongolia, and since the Mongolians in Outer Mongolia are responsible for the defence of, and the maintenance of order within their boundaries, they are granted the sole right to organise troops and police. They are also granted the right to oppose colonisation by others than Mongols within their boundaries.
- 3—Russia on its part undertakes that with the exception of Consulate Guards it will not despatch troops to Outer Mongolia and also undertakes not to carry out colonisation measures in Outer Mongolia, and further that with the exception of such officials as are allowed by treaty for the Consulates not to place other kinds of officials as Russian representatives.
- 4—China desiring to employ its rights in Outer Mongolia in a peaceful manner hereby declares that it will accept such principles of procedure as Russia as mediator may lay down in accordance with the objects set forth in the foregoing stipulation for China's treatment of Outer Mongolia and that the Chief Official of the Central Government there shall regard himself as having the character hitherto attaching to the local official in any part of China.
- 5—The Government of China, out of consideration for the mediation of the Russian Government agrees to give to Russian subjects in Outer Mongolia the commercial privileges to be enumerated here below. (Here follows the 17 articles of the Urga Protocol.)
- 6—Hereafter in the case of agreements between Russia and Outer Mongolia relating to changes in the international relationships

*The Urga Protocol, with a Commentary thereon by Lieut. Binstead, was published in the last number of the FAR EASTERN REVIEW in connection with an article giving a full statement of the Mongolian Question.

of that region it is necessary that China and Russia consult direct and only after the Chinese Government has given its consent shall they become effective

The amendments proposed by the House were:

In Article 2 it was desired to delete the words giving Mongolia the right to raise troops, though it was agreed to allow her to organise a police force.

In Article 3 it was desired to delete the words "with the exception of Consular Guards."

In Article 6 it was desired to remove the necessity of China consulting Russia with regard to international questions regarding Mongolia.

The remainder of the Articles were agreed to.

EDUCATION IN THE PHILIPPINES

Particular interest attaches to the periodical reports of the Director of Education in the Philippines, inasmuch as they show what progress is being made in regard to one of the most important responsibilities that America has taken upon herself in the Archipelago. Satisfactorily to fulfil her mission in the Philippines the moral elevation of the people must synchronize with material betterment.

We have before us as we write the twelfth annual report of the Director, and it is most gratifying to find that its tone generally is confident and optimistic. Great progress had been made in the attempt to improve the quality of the English taught in all schools. The important department of industrial instruction had been organized and developed to a greater extent than ever before. Special courses in farming, housekeeping and household arts, trade work, and business are offered for those pupils who desire to do more industrial work than that prescribed in the general intermediate course. These special industrial courses are replacing the general course in many intermediate schools. Already 40 schools are giving the farming course, 61 are giving the housekeeping course, 39 are giving the trade course, 47 the teaching course, and one the business course, as compared with a total of 204 conducting the general course.

As is at once evident, with requirements so definitely fixed for industrial work in the schools, the great majority of the pupils who are enrolled must be engaged in some branch of this work. An examination of the figures included among the statistical tables of the report shows that of the total enrollment of 235,740 boys and 138,842 girls during the month of February, 1912 (an average month), 216,290 boys and 125,203 girls—91 per cent. of the entire monthly enrollment—were doing some form of industrial work.

In regard to the teaching force a decided improvement was to be noted in

the personnel, both American, and Filipino. With few exceptions primary instruction was now handled by Filipinos and a large proportion of the intermediate classes had also been handed over to them. It has throughout been the wise policy of the Bureau to place upon the Filipinos increased responsibilities as they became capable of bearing them.

As in many other Departments, the great development of the work has caused increased financial demands, and the report states that much further progress cannot be made until more funds are placed at the disposal of the Bureau of Education. The teachers were paid less than they would receive in private business or in other Government bureaus. With reason it is urged that they might be provided for more generously. Very satisfactory progress appears to have been made in connection with the provision of suitable school buildings, though the financial requirements in this connection were a source of some anxiety.

Study of this report can be confidently recommended to the Government of China. Many of the problems with which the Philippines Bureau of Education is so successfully coping, are confronting the Republic and it is obvious that the experience gained by the Bureau would prove of great value to Chinese educationalists. It will be readily admitted that there are few problems in China of more importance than the education of the rising generation, which will inherit vastly wider political responsibilities than did their forbears. It is eminently desirable that the activities of those into whose hands the educational destinies of the country will be committed should be directed into the best channels, and a careful investigation of progress in other places where conditions are in many respects similar will enable pitfalls to be avoided and the best results most quickly to be obtained.

THE MONTH IN CHINA

Politics almost engrossed attention in China during June. The tension between the Central Government and the Parliament showed little sign of relaxing, and the latter was not willing to accept the Russo-Chinese Agreement in regard to Mongolia. The Senate finally decided to return to the Government the despatch requesting the House to investigate and register the Quintuple Loan, but the Government refused to receive it on the ground that the resolution deciding to return the despatch had been improperly passed.

The Government removed from office the Tutuh of Kiangsi, Li Lieh-chun, and appointed Hu Han-min, Tutuh of Kwantung, as commissioner with Mr. Ivan Chen to proceed to Darjeeling to negotiate with the British authorities in reference to Tibet. The imminent re-

tirement from office of the Tutuh of Anhui, Poh Wen-wei, was also foreshadowed, and it was hinted that Tang Yen-kai, Tutuh of Hunan, would not hold his post much longer. These four Tutuhs, it will be remembered, were outspoken in their condemnation of the Government's alleged complicity in the murder of Sung Chiao-jen and of the manner in which the Quintuple Loan was concluded.

Mr. J. L. Chalmers, Statistical Secretary of the Inspectorate General of Customs, issued his report on the foreign trade of China for 1912. This interesting and valuable report shows that the revenue from Customs dues surpassed the record collection of 1911 by Hk. Tls. 3,770,786, while the whole value of the trade showed an increase over the preceding year of 12.6 million taels. It was, of course, already known that in spite of the fact that political conditions in China were far from normal during 1912, the trade results were surprisingly good, but Mr. Chalmers' report affords official support to those who expressed confidence in China's recuperative powers.

Tsen Chen-hsuan resigned the post of Director-General of the Hukuang Railways, and the Vice-Minister of the Board of Communications has taken over the duties appointed. It was hoped that the conclusion of a satisfactory arrangement in regard to the Hukuang Loan would lead to immediate activity, but this hope has not been realised. However, survey and other preliminary work is proceeding, and it is hoped that, when political conditions have definitely settled down, the work will be pushed on with.

The survey of the Pukow-Sinyang Line, it is understood, has been completed, and the Chinese papers have published what purport to be the main terms of the agreement for the construction of this line. Matters in connection with the Lung-Tsing-U-Hai Railway are progressing steadily. Negotiations are being carried on in regard to other lines, and there is little doubt that a settlement of the more important political problems confronting China would be followed by an immediate development of activity in regard to railway construction. We publish in this issue the annual reports of the Peking-Mukden Railway and the Shanghai-Nanking Railway, both of which show that steady progress is being made.

The Government presented a Budget for the first six months of 1913 which showed:—total receipts \$51,336,880, total payments \$168,823,452 and deficit \$117,486,572.

Great criticism was directed at the Government after the presentation of the Budget, and there have been indications that there is some possibility of the more important parties in Parliament combining to denounce the Government's financial policy, especially in regard to the conclusion of the Austrian Loans. A motion of impeachment was expected to be presented early in July,

U. S. RAILWAY BUSINESS FOR FEBRUARY

Railway business in the United States for February was slightly greater than for the corresponding month of 1912. This is indicated in statistics compiled by the Bureau of Railway Economics from the reports of steam railways, operating over ninety per cent. of the mileage of the country to the Interstate Commerce Commission.

The returns for February average as follows per mile of line: Total operating revenues per mile amounted to \$1,015, which is 5.3 per cent. greater than in February, 1912; operating expenses per mile amounted to \$756, or 6.4 per cent. greater than in 1912; net operating revenue per mile amounted to \$259, or 2.4 per cent. greater than in 1912. Taxes amounted to \$46 per mile, an increase of 5.7 per cent. Operating income, which is what is available for rentals, interest on bonds, appropriations for betterments, improvements, and new construction, and for dividends, after the payment of operating expenses and taxes, amounted in February to \$212 per mile. This represents an increase over February 1912 of less than four dollars a mile, or 1.8 per cent.

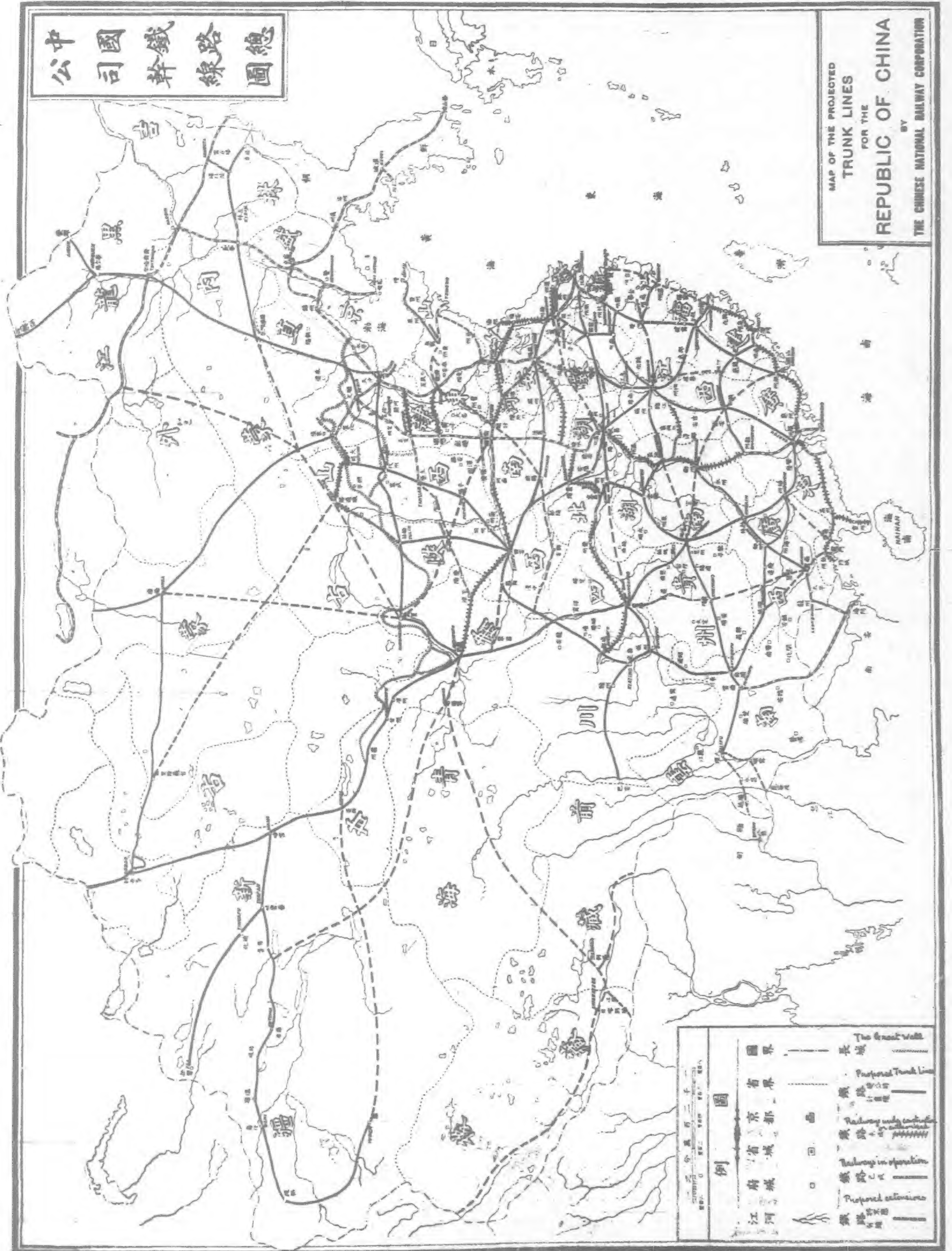
As February contained twenty-nine days in 1912 and but twenty-eight days in 1913, the returns for this month of the current year, other things equal, would be somewhat less than for February, 1912. A comparison of operating income on the basis of income per mile per day eliminates the effect of the extra day in 1912. On this basis operating income per mile per day averaged \$7.58 in February, 1913, \$7.19 in 1912, and \$6.49 in 1911.

The railway returns here presented are for the month ending February 28, and do not reflect the recent impairment of railway operating conditions on account of floods in the middle West and the South. It will not be possible to trace the effect of these impaired conditions in the railway record until the returns for March, April and later months are available.

MINERAL PRODUCTS AND CURRENCY REFORM

The Currency Reform Committee is now actively engaged in evolving a constructive scheme for the carrying out of the stupendous task of unifying the coinage of the country. As accurate data in regard to the output and estimated quantity of the various metals of the country is absolutely necessary in determining the suitability of any standard to be adopted, the Committee have written to the Board of Industry and Commerce asking for detailed information in regard to the status of mines containing the following: silver, copper, iron, tin, nickel, lead, zinc, etc.

The Board has searched among the records and documents for the data, but finding that the records are not complete, has issued instructions to all the provinces to furnish such data and report them on specially prepared forms.



PEKING-MUKDEN RAILWAY

ANNUAL REPORT AND ACCOUNTS

General Report

Mr. Li Tsoi-chee, the Managing Director of the Peking-Mukden Line, has issued his report for 1912. He says:

The designation of the Railway has been changed. The old style of Imperial Railways of North China has given place to the new name of Chinese Government Railways, Peking-Mukden Line. So far, the change is principally one of name, for the administration of the Director continues, as before, and remains under the control of the Board of Posts and Communications in Peking.

From the beginning of the Revolution, and before the creation of a form of Republican Government, the country was in a chaotic state, and for a time railway operations were carried on only a great personal risk and danger. In consequence, the loss sustained by this line was considerable. After the historic change had been successfully made, and although order had been somewhat restored in the country, Manchuria was visited with famine, and inundations broke out in the Province of Chihli, resulting in a general depression of trade throughout this part of the country. The traffic was then so stagnant that all hope was almost given over of being able to bring the earnings to the usual figures of previous years, but thanks to the untiring efforts and energy of the entire staff, on the general revival of trade, an unprecedented result was obtained. Besides

grain, the earnings from coal traffic and salt show most notable increases.

The traffic earnings for 1912 are the highest on record for this railway.

The results of the year's working are compared with those of the previous twelve months in the columns below:—

	1911	1912
Earnings	\$ 11,668,627.89	\$ 13,183,638.51
Working Expenses	3,651,132.53	3,820,657.23
Balance after paying Working Expenses	8,017,495.36	9,362,981.28
Ratio of Working Expenses to Earnings	31.3%	28.9%

Mileage.—The mileage open to traffic is 605.76 miles.

Loans.—On 1st August, 1912, the Imperial Chinese Railways 5% Gold Loan of 1899 was reduced by the amount of the Eighth Drawing of £57,500 to £1,840,000.

The service of the Gold Loan of the South Manchuria Railway has also been duly met.

Exchange.—The monthly remittances to London in settlement of Loan service obligations were made at the average rate of 2/10½ per Tientsin Tael.

Staff.—At the close of a momentous year, the Director gladly avails himself of this opportunity to thank all grades of the staff for their loyal devotion to duty and hearty co-operation in the service.

Statement of Accounts for the Year Ended 31st December, 1912

No. 1 CAPITAL AUTHORISED AND CREATED

DETAILS	Capital Authorised			Capital Created		
	Stock and Shares	Loans	Total	Stock and Shares	Loans	Total
Chinese Government and Chinese Shareholders	\$ 21,994,428.57	—	21,994,428.57	\$ 21,994,428.57	—	21,994,428.57
Under Loan Agreement 1899, £2,300,000	—	27,600,000.00	27,600,000.00	—	27,600,000.00	27,600,000.00
Under Japanese Loan Agreements, South Manchuria Railway Loan, 1909 Gold Yen 320,000	—	377,142.86	377,142.86	—	377,142.86	377,142.86
	\$21,994,428.57	27,977,142.86	49,971,571.43	21,994,428.57	27,977,142.86	49,971,571.43

No. 2 STOCK AND SHARE CAPITAL CREATED SHOWING PROPORTION ISSUED

	Amount Created	Amount Issued	Amount Unissued
Chinese Government and Chinese Shareholders	\$ 21,994,428.57	21,994,428.57	—
	\$21,994,428.57	21,994,428.57	—

No. 3 CAPITAL RAISED BY DEBENTURE STOCK

<i>Chinese Government Peking-Mukden 5% Railway Loan formerly called Imperial Chinese 5% Railway Loan, 1899 (original amount of Loan £2,300,000).</i>			\$
Existing at 31st December, 1911	£ 1,897,500	22,770,000	
Bonds of Eighth Drawing paid off	57,500	690,000	
Existing at 31st December, 1912	£ 1,840,000	22,080,000	
Of which there was invested in the Hongkong & Shanghai Bank, London, at 31st December, 1911	£ 85,251.0.9	1,023,012.48	
Less Withdrawals	£ 40,255.5.4	483,063.20	
Leaving invested in the Hongkong & Shanghai Bank, London, at 31st December, 1912	£ 44,995.15.5	\$ 539,949.28	
<i>South Manchuria Railway Loan, 1909 (original amount of Loan G. Yen 320,000.00).</i>			
Existing at 31st December, 1912	G. Yen 266,666.70		

No. 4

RECEIPTS AND EXPENDITURE ON CAPITAL ACCOUNT

To Expenditure	Dr.		Total to 31st Dec. 1912
	Total to 31st Dec. 1911	Amount expended in Year 1912	
Lines open for Traffic	\$ 47,245,485.01	\$ 1,221.46	\$ 47,246,706.47
Authorised by High Court of Chancery	1,849,711.38	538,677.80	2,388,389.18
New Steamer	336,475.78	—	336,475.78
	\$49,431,672.17	\$539,899.26	\$49,971,571.43
Balance			Nil
			\$49,971,571.43

By Receipts	Cr.		Total to 31st Dec. 1912
	Total to 31st Dec. 1911	During Year 1912	
Shares	\$ 21,994,428.57	—	\$ 21,994,428.57
Debenture Stock	27,600,000.00	—	27,600,000.00
South Manchuria Rly. Loan	377,142.86	—	377,142.86
			\$49,971,571.43

No. 5

DETAILS OF EXPENDITURE ON CAPITAL ACCOUNT

Rolling Stock	\$413,274.94
Tongshan Works	47,140.04
Shanhaikwan Bridge Works	6,351.44
New Head Office Buildings	5,127.83
Stations, Yards and Sidings	67,536.44
Bridges	468.57
	\$539,899.26

No. 6

EXPENDITURE ON CAPITAL WORKS PAID FOR FROM REVENUE

Betterments.	
Buildings at Chien Yeng Men Station, Peking	26,607.92
Flood protection works in Hsin Min Fu district	65,729.74
Railway Extension to Mukden City	89,810.63
Locomotive Sheds	95,066.82
Staff Quarters	23,280.92
Miscellaneous	74,078.25
Expended during Current Year	374,574.28
Expended in Previous Years	8,983,970.27
	\$9,358,544.55

No. 7 REVENUE ACCOUNT

Dr.

To Maintenance of Way, Works and Stations as per Abstract A	969,948.83
To Locomotive, Carriage and Wagon Expenses as per Abstract B	1,796,162.04
To Traffic Expenses as per Abstract D	511,345.46
To General Charges as per Abstract E	543,200.90
To Balance carried to Net Revenue Account	3,820,657.23
	<u>9,362,981.28</u>
	<u>\$13,183,638.51</u>

Cr.

By Earnings:	
Passengers	5,257,591.89
Goods	6,850,353.37
Military Traffic	77,921.59
Miscellaneous Receipts	665,957.03
Chinese Government Traffic	331,814.63
	<u>\$13,183,638.51</u>

No. 8 NET REVENUE ACCOUNT

Dr.

To Debenture Loan, Eighth instalment repaid	690,000.00
To Debenture Loan, Interest	929,383.05
To Chinese Shares, Interest	3,360.59
To S.M.R. Loan, part capital repaid	18,222.21
To S.M.R. Loan, Interest	14,355.16
To Paid to Chinese Government	6,320,263.31
To Shipping Department	39,230.24
To Tongshan College, Upkeep	72,328.72
To Bonus to Employees	182,107.51
To Betterments, being amount taken from Revenue for Capital Works	374,574.28
To Extraordinary repairs	84,751.91
To Balance	6,111,646.42
	<u>\$14,840,223.40</u>

Cr.

By Balance forward from last year	5,477,242.12
By Balance transferred from Revenue Account	9,362,981.28
	<u>\$14,840,223.40</u>

No. 9 GENERAL BALANCE SHEET

Dr.

Capital Account, Balance per No. 4	Nil
Salaries and Wages due	165,693.94
Sundry Creditors	86,698.45
B.R.A. Balance taken over	3,293,107.44
Net Revenue A/c. Balance at Credit per No. 8	6,111,646.42
	<u>\$9,657,146.25</u>

Cr.

Hongkong and Shanghai Bank, London	
Loan Funds, on Deposit Receipt £ 30,000	
Loan Funds, on Current Account	14,995.15.5
	<u>539,940.28</u>
Revenue Funds, on Deposit Rect	35,000.
Revenue Funds, on Current Account "A"	33,465.16.9
	<u>821,509.04</u>
To meet repayment of Loan Capital	229,716.47
Cash with foreign Banks in China	
On Deposit Receipt \$1,495,714.29	
On Current Account 1,283,548.89	
	<u>2,779,263.18</u>

Cash on hand in Head Office	280,709.80
Stores	2,847,320.49
Investments	1,190,289.09
Traffic Accounts due to the Railway	670,219.48
Other Accounts due to the Railway	166,075.09
Accounts due by other Railways	122,953.33
	<u>\$9,657,146.25</u>

Wm. Henderson, C.A.,
Chief Accountant.

ABSTRACTS

A. Maintenance of Way, Works and Stations.

Year ending 31st December, 1912	Year ending 31st December, 1911
Salaries, Office Expenses and General Superintendence	

166,596.97	191,683.94
Maintenance and Renewal of Permanent Way:—	
Wages	
323,153.13	329,974.67
Materials	
326,710.27	283,969.40
649,863.40	613,944.07
Repairs of Bridges.	
Wages	
16,146.02	13,432.65
Materials	
25,881.54	20,197.26
42,027.56	33,629.91
Repairs of Stations and Buildings.	
111,460.90	90,763.63
<u>\$969,948.83</u>	<u>\$930,021.55</u>

B. & C. Locomotive Power and Rolling Stock Repairs.

Year ending 31st December, 1912	Year ending 31st December, 1911
Salaries, Office Expenses and General Superintendence	
156,333.38	157,039.29
Running Expenses.	
Wages connected with working Locomotive Engines	
164,579.43	153,001.77
Coal	
476,790.53	438,469.72
Water	
52,473.05	46,070.46
Oil, Tallow and other Stores	
77,741.39	66,342.09
771,584.40	703,884.04

Maintenance and Renewal of Locomotives and Machinery:—

Wages	
341,583.45	311,673.83
Materials	
132,528.76	99,723.04
474,112.21	411,396.87

Repairs and Renewals of Cars:—

COACHING VEHICLES:

Wages	
94,403.73	81,297.64
Materials	
58,631.95	59,124.33
153,035.68	140,421.97

GOODS VEHICLES:

Wages	
94,374.82	71,136.66
Materials	
90,154.43	91,868.81
184,529.25	163,005.47

Cleaning Carriages and Oiling

44,612.68	42,004.48
1,784,207.60	1,617,752.12
Steam Ferry at Newchwang	
11,954.44	11,338.51
<u>\$1,796,162.04</u>	<u>\$1,629,090.63</u>

D. Traffic Expenses.

Year ending 31st December, 1912	Year ending 31st December, 1911
\$	\$
97,732.01	General Superintendence 95,290.60
252,402.86	Wages of Station Staff 223,268.12
74,043.76	Wages of Train Staff 62,180.45
77,218.85	Lighting and Small Stores 57,836.35
.12	Wagon Covers, Ropes, etc. 26.89
9,947.86	Station Fittings and Furniture 7,022.85
<u>511,345.46</u>	<u>445,625.26</u>

E. General Charges.

Year ending 31st December, 1912	Year ending 31st December, 1911
\$	\$
Cr.	Cr.
254,226.56	General Superintendence 250,502.31
70,610.56	Accountant's Department 68,106.06
70,775.01	Stores Department 77,064.89
42,399.97	Medical Department 100,957.40
	Rents of Buildings and Lands 11,287.52
6,261.95	Police 111,765.52
97,949.40	Telegraph Department . 151,089.01
156,564.69	Stationery and Printing 58,157.73
80,687.65	Compensation 3,874.42
4,031.19	Sundries 35,639.47
58,434.96	
<u>850,941.94</u>	<u>869,345.23</u>
307,741.04	Cr. Interest, &c. 222,950.14
<u>543,200.90</u>	<u>646,395.09</u>

Earnings.

Year ending 31st December, 1912	Year ending 31st December, 1911
\$	\$
5,257,591.89	Passengers 4,336,907.08
6,850,353.37	Goods 5,931,056.62
77,921.59	Military Traffic 53,002.51
665,957.03	Miscellaneous Receipts 399,094.18
331,814.63	Chinese Government Traffic 948,387.50
<u>13,183,638.51</u>	<u>11,668,627.89</u>

Report on Permanent Way Department

Miles of Main Line Track	605,760 Miles.
Miles of Sidings, permanent	150.662
temporary	8.312
	<u>Total 158.974</u>

Increase of Main Line	nil.
---------------------------------	------

Increase of Sidings, permanent	3.018
temporary	0.532
	<u>Total 3.550</u>

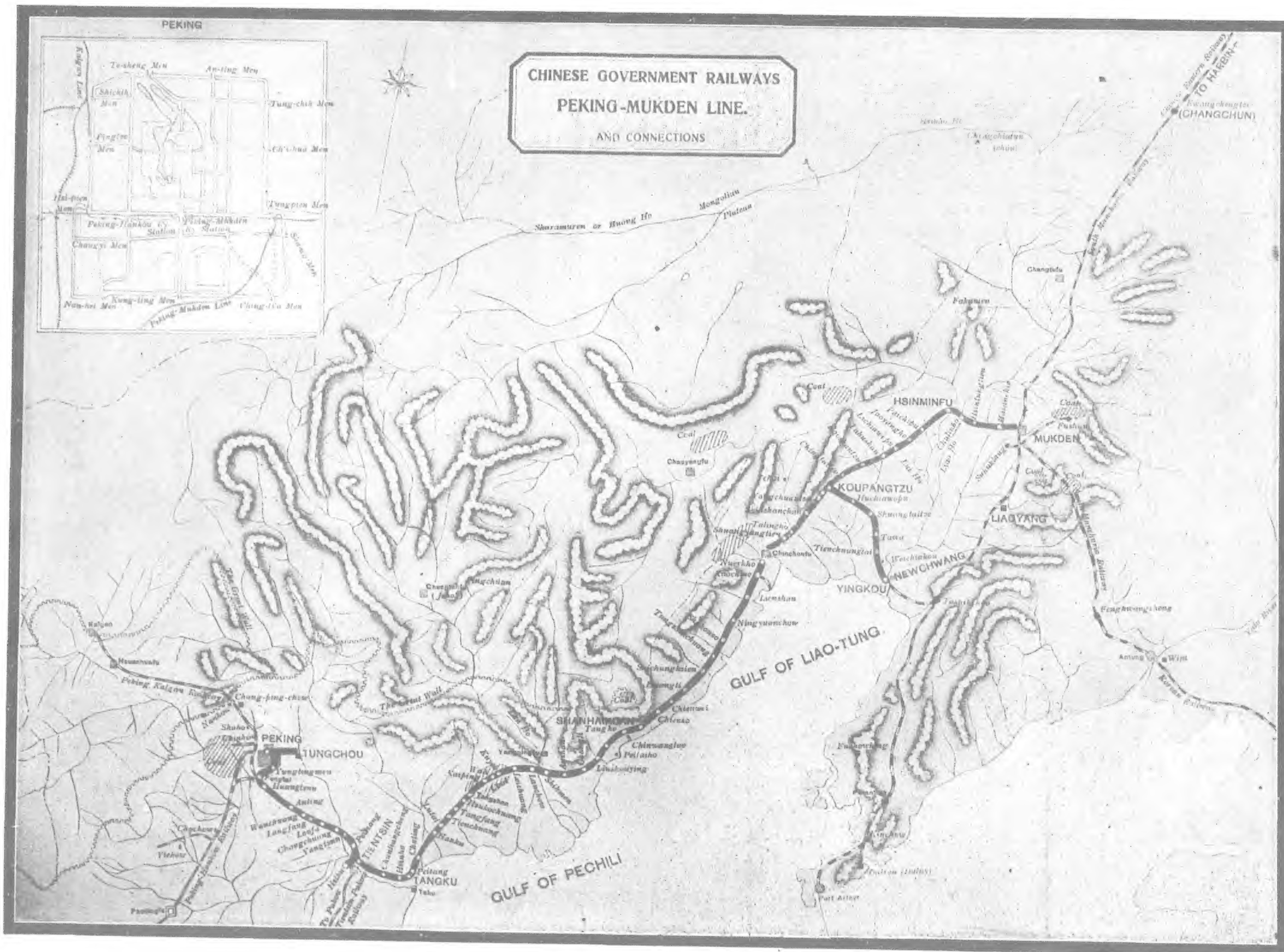
New sleepers put in for maintenance	
(a) 8 ft. sleepers	221,567.
(b) Crossing timbers	2,601.

Rails changed.	
128 Old section 60 lbs. broken or defective	
19 New section, 60 lbs. " " "	
11 Standard 85 lbs. " " "	
1 85 lbs. Hanyang " " "	
1 Japanese 60 lbs. " " "	
385 ft. of old section 60 lb. track replaced by new section 60 lb.	
550 ft. of worn 85 lb. track relaid with new 85 lb.	

Fangs of ballast used for maintenance	16,139
Fangs of ballast used for new work	8,356
Floor ties renewed	4,776

Probable renewals for next year.

(a) 8 ft. sleepers	266,000
(b) Crossing timbers	3,960
(c) Floor ties	7,100



In connection with track renewals it is to be remembered that our track is laid with 85 lb. rails from Peking to Tongshan and from thence to Mukden and Yinkow we only have 60 lb. rails. This difference in weight and strength of rail on the main line causes serious difficulties in the economical working of our traffic, chiefly in restricting the weight of through trains to the capacity of the engines on the light rail. It also limits our car axle load for the whole line and it also seriously interferes with schemes for heating our trains from the locomotives.

It is therefore strongly recommended that the line between Tongshan and Mukden be relaid with 85lb. rails at an early date, and that the first section of 95 miles between Tongshan and Shan-hai-kuan be undertaken next year—1913.

New bridges completed:—

Bridge No. 141.—One concrete pier built to replace the old one which was blown up and 2 new girders erected to replace damaged ones.

Bridge No. 275.—One span added and bridge converted into a reinforced slab top.

Bridge No. 58 (Hsinminfu line) 17 spans of 30 ft.

Bridge No. 61 (do.) 2—20 ft. spans added.

Bridge No. 61a (do.) 2—20 ft. spans.

Fangs of rubble used for protective work 12,825 fangs

Probable extra Bridge Work, etc., necessary to cope with floods.

Re-forming and pitching part of bank and raising part of track between Yangtsun and Lofah.

Bridge No. 52. Converting timber piers to concrete.

Liu Ho dams, probable extension.

Fangs of Earthwork executed.

(a) New Work—152,869 fangs (including 113,114 fangs Mukden City extension).

(b) Repairs 93,200 fangs.

Platforms extended.

None, but Tientsin East down platform had 980 feet wall built to make both sides available.

New Buildings erected.

Chienmen (Peking), Chinese Post Office (2 stories) sq. ft. 5,856

Tientsin, New Engine Shed including Loco. office, etc. " 28,038

Chang-kui-chuang, Station building " 914

Tong-shan Works, Timber drying shed " 4,000

Tong-shan Works, Painting shop extension " 9,540

Kaiping, U. S. Army barracks " 2,203

Wa-li, U. S. " " 1,919

Tang-ho, Engine shed and rooms for drivers " 2,309

Shan-hai-kuan Bridge Works, carpenters' shop " 2,460

Huang-ku-tun, Engine shed extension and accessory buildings " 10,077

Total sq. ft. of various buildings and quarters erected and extensions made along the line " 24,120

Total sq. ft. 91,436

Signals erected.

Tientsin, Dwarf semaphore.

Tang-ho, Standard semaphore for Chinwangtao branch.

Chienso, 1 Reinforced concrete signal post.

Chu-liu-ho, 4 " " "

Quarry opened.

Small quarry opened at Shuang-yang-tien and siding laid to it.

Heavy works executed.

Bridge No. 106 (Yang-ho) 350 ft spur built and pitched with waste ashlar and rubble on willow mattresses.

Tientsin, New Engine Shed for 18 engines with necessary tracks, coaling and watering arrangements and yard. Shed is rectangular and has six tracks.

Near Ning-yuan-chow, Pitched dam round village at 113.75 mile.

Between bridges Nos. 222 and 223. Training dam and raising river bank near No. 222 bridge.

Bridge No. 264. Three training spurs.

Chin-chow, new station approach road.

Bridge No. 275, 1 span added.

New bridge No. 58 at Chu-liu-ho built and old No. 58 bridge filled up.

Chin-chow and Yinkow, new roof on engine sheds.

Liu Ho, 46,475 lin. ft. of dams built.

Bridge No. 141, Repairs.

Huang-ku-tun, Engine shed extended 186 ft. 2 tracks with heating and all accessories.

Bridge No. 61, extended 2 spans of 20 ft. (M. D. line).

Bridge 61a, 5 spans of 20 ft. built.

Mukden City yard. Earthwork filling.

Foreshore protection.

Siku river bank repaired and pitched for about 1,000 ft.

Yinkow, 367.41 fangs of rubble used.

Wharfage.—Nothing new, but 19,000 sq. ft. of decking renewed on Tongku Wharf.

Painting executed for maintenance.

115 Bridges painted.

Tientsin, Tongshan and Pei-tai-ho Overbridges.

Tientsin Central Station Subway.

Tangho Turntable.

Yinkow ferry boat and pontoons.

Staff quarters (about 30) painted.

Shan-hai-kuan station buildings.

Sar-hou-sou, Ning-yuan-chow, Lien-shan and Chin-chow station roofs and water tanks.

All signal posts, notice, nameboards, etc.



Mr. Li Tsoi-chee, Managing Director, Peking-Mukden Line

Water supply works.

Tientsin, New main to tank and hydrant at East end, 570 ft. 4" and 485 ft. of 1½" pipe.

New Loco. shed and yard. One 5,600 gall. tank, one 4,300 gall. tank, one water crane, 110 ft. of 8" pipe, 562 ft. of 3", 35 ft. of 2" and 20 ft. of 1".

BRIDGE WORKS, SHANHAIKUAN

The tonnage of Work turned out was as follows:—

Girders:—

		Tons	63.	0.	0.	0
3.	50 ft. Clear Deck Spans		513.	7.	2.	1
35.	45 ft. " " "		73.	9.	3.	27
9.	30 ft. " " "		4.	1.	0.	24
1.	20 ft. " " "		19.	19.	0.	23
6.	20 ft. " Differdange					

Total tons 673. 17. 3. 19

Special Work, Tanks, etc.:—

		Tons	2.	13.	0.	8
1.	16'x7'x8' Water tank		2.	11.	0.	24
8.	4'x4'x2' Steel oil tanks for K. P. T. Workshop		3.	14.	0.	6
8.	4'x4'x4' Steel oil tanks for K. P. T. Workshop		1.	13.	1.	9
2.	8'x4'x4' Steel oil tanks for K. P. T. Workshop		43.	11.	3.	4
1.	247'x30' Steel Octroi shed erected at C. M. station		45.	5.	3.	4
2.	55 0" Steel engine turntables, one for Tung-Pu Railway and one for T. S. new engine shed					

Total tons 99. 9. 0. 27

Carriage washing hydrant, 460 ft. of 2" pipe.

Hsü-ko-chung, New steam pump and 180 ft. of 4" pipe.

Chang-li, Pipe connection made to admit pumping direct from Yin-ma-ho to subsidiary tank at Chang-li station.

Hsiao-ling-ho (near Chinchow) New pump foundations built.

Kao-pan-tze, 1 new 6" borehole added.

Works in progress.

Tientsin Engine shed and turntable completion. Sidings at East end of station.

Mukden City Yard. Earthwork filling.

Accidents during the year.

Employees killed . . . 6. Injured . . . 0

Passengers killed . . . 17. Injured . . . 24

Trespassers killed . . . 49. Injured . . . 25

Passengers drowned . . . 1.

Collisions while shunting in station yards . . . 5

Engine and Car derailments in station yards 80

Train derailed bet. Lei-chuang and Lan-

chow during Lanchow uprising . . . 1

Engine derailed on Chang-li weir during flood . . . 1

Train separated . . . 4

Train on fire . . . 3

Bridges blown up . . . 2

On February 3rd, No. 73 train was wrecked at No. 141 bridge, 11 passengers were killed and many injured. The girders of the Bridge were evidently blown up by dynamite, one span was practically destroyed and another so badly damaged that it had to be changed.

On Sept. 15th the rails and girders of No. 51 bridge, on the Hsinminfu line, were damaged by explosion, a piece of rail 4 ft. long was blown away some distance, and the up flange of girder badly bent. The damage was not discovered and No. 74 train passed over without either engine or cars being derailed, after which the bridge was repaired.

Rainfall and floods.

General rainfall averaged 25.30 inches, but at Fengtai 6.75 inches fell in 10 hours on May 17.

10.00 inches rainfall averaged 28 hours on July 5 and 6.

9.25 inches rainfall averaged 50 hours on July 21, 22 and 23. There was no serious damage done by floods on the Railway excepting between Tientsin and Peking.

At the end of July the three rivers Lung Ho, Feng Ho and Pei-Ho crossing the line between Yangtsun and Lofa were all in heavy flood and broke their banks. At the same time the Hun Ho, running roughly parallel to the line, broke its bank and swelled the Lung Ho and Feng Ho. The country between Tientsin Central and Lo-fa was practically all under water.

Water was flowing over rail to a depth of two inches for a half mile and over the ballast for another mile but was prevented from cutting out the bank. On July 31st when the flood was about at its highest a strong gale got up and a similar state of affairs occurred a few days later. These two gales did a great amount of damage to the pitched bank between Yang-tsun and Chang-chuang, but stone was obtained in time and thrown down to prevent the track being undermined. The flood was the highest experienced at this part of the line since it was built in 1896.

Miscellaneous:—

Ironwork to the extent of	Tons	74.	4.	0.	0
Total Tonnage of Ironwork done	Tons	847.	11.	0.	18

Foundry:

The Foundry has been fully employed upon castings for points and crossings, signal post fittings and turntable centres and miscellaneous castings for maintenance and construction. Iron castings to the extent of

Brass castings to the extent of	Tons	119.	16.	1.	20
		1.	14.	2.	13
Total tons	121.	11.	0.	5	

New Machinery erected:—

One new sliding, surfacing and screw cutting gap bed Lathe, 11' centre X 18" gap bed, erected in Fitting Shop.

General Report of Work Carried out by Locomotive and Carriage Works.

Locomotives.—General overhaul 47; Repaired at Kao-Pan-Tze 15; New boilers constructed for renewals 6; New boilers under construction 9; New fireboxes put in 8; Half sides put in 16; New firebox tube plates 13; New tube plates smoke box 2; New back plates put in 4; New sets of tubes put in 23; Boilers withdrawn from service 10; Tenders repaired at Tongshan Works 38; Tenders repaired at Kao-Pan-Tze 13.

Steamer.—Ferry boat, s.s. "Liaotung" engines and boilers overhauled.

Coach and Car Repairs.—At Tongshan Works, 1,253 Freight, 125 Passenger, and 18 Brake Vans were sent in for repairs.

At Kaopantze Works, 776 Freight, 60 Passenger and 36 Brake Vans were repaired. At the Running sheds 12,138 minor repairs were effected to Cars, and Axle Boxes of 22,865 cars were repacked.

ROLLING STOCK COMPLETED

Passenger stock.—First class Drawing room cars, 5; First class Sleepers 3; First class Diner 1; Second class Sleeper 1.

Freight stock.—20-ton Covered Goods, 50; 30-ton High side 50; 24-ton High side (mounted on old spare bogies) 15.

ROLLING STOCK UNDER CONSTRUCTION

Passenger stock.—First class, 6; Postal vans, 4; Kitchen car, 1; First class Sleeper, 1; Kitchen and 2nd Diner, 1.

Locomotives.—19" Moguls 6.

Tenders.—Eight wheel Bogie Tenders 4.

IMPROVEMENT TO ROLLING STOCK.

Freight stock.—Wagons fitted with Coupler locking pins lifting gear 9; Wagons converted from 20-ton to 24-ton High side 8; 30-ton freight cars 6' doors altered to 4 ½' 132.

Passenger stock.—Coaches fitted with Electric light 3; Coaches fitted with Westinghouse air Brake equipment 2; Coaches (3rd class) fitted with seats and baggage racks 7; Coaches (2nd class) fitted with piping for steam heating 2; Coaches (1st class) fitted with new type of berth 2; Coach (1st class) fitted with Stones Louvre ventilators 1; Coach (1st class) fitted with Buffet 1; Coach (private car) fitted with double roof 1; Coach (private car) rebuilt 1; Coach frames fitted with new ends, end platforms enclosed, and vestibules fitted 3; Baggage and Brake vans mail compartments added, and vans newly equipped with Engine Dynamo battery 2.

Engines, Tenders.—Fitted with Westinghouse air Brakes 3; Fitted with Westinghouse Train heating apparatus 19.

ROLLING STOCK WITHDRAWN FROM SERVICE

Condemned.—Private car 1; Brake Van 1; 20-ton pony cars 3; 20-ton Covered Goods 1.

Wrecked at Bridge 141. O. W.—10-ton Coal car 1; 12-ton Coal cars 3; 20-ton Pony cars 2; 24-ton High side 1; 30-ton Covered Goods 1; 20-ton High side 1; Eight wheel Bogie tender 1.

Sold to Foreign Lines.—Engine No. 21, 1; Tender No. 53, 1.

ROLLING STOCK COMPLETED FOR OTHER RAILWAYS

Kirin Railway.—17" cylinder mogul Locomotive 2-6-0 type 17" X 24" Drivers 4' 6" 1; Bogie tender 1.

NEW ROLLING STOCK NOW IN PROGRESS OF CONSTRUCTION FOR FOREIGN LINES AND OTHERS

Kalgan Railway.—30-ton High side cars 120; 10-ton Coal cars 20; 4 wheel Brake vans 5.

Tao-Ching Railway.—30-ton High side cars. (Steel Bodies and frames) main parts of Bogies supplied by Tao-Ching Railway 100.

Asiatic Petroleum Co.—30-ton Oil tanks 7.

Varnishing and Painting.—Locomotives 25; Tenders 18; Coaches 72; Brake vans 22; Freight 1265.

Foundry Output.—Iron Castings 490.5 tons; Brass Castings 56 tons.

Average Number of Employees.

	1911	1912
Tongshan Works	2,190	2,568
Kao Pan Tze Shops	291	326
Locomotive sheds	1,571	1,614
Total	4,052	4,508

ROLLING STOCK EQUIPMENT AT 31ST DECEMBER 1912

	No. of Veh.	Ton.	Axles.
Freight Stock.			
10 Ton Capacity:—			
Power Vans	6	60	
Coal Cars	271	2710	
Water Tanks	7	70	
Pig Cars	7	70	
12 Ton Capacity:—			
Coal Cars	469	5628	
Pony Cars	38	456	
15 Ton Capacity:—			
Ballast Cars	29	435	
20 Ton Capacity:—			
Flat Cars	74	1480	
Ballast Cars	258	5160	
High Sided	816	16320	
Covered Goods	107	2140	
24 Ton Capacity:—			
Flat Cars	1	24	
Ballast Cars	16	384	
High Sided	156	3744	
30 Ton Capacity:—			
Ballast Cars	38	1140	
High Sided	462	13860	
Covered Goods	165	4950	
Water Tanks	3	90	
Oil Tanks	40	1470	
Timber	2	60	
Total Cars	2,974	60,251	

Passenger Stock.

Imperial	3	12
State	3	12
Private	13	40
Directors	1	4
1st Class	28	112
2nd Class	39	156
3rd Class	100	400
Composite	17	68
Ordinary Buffet	7	28
Kitchen	1	4

Train de Luxe Equipment

1st Class Buffet	3	12
2nd Class Buffet	2	8
1st Class Sleepers	5	20
2nd Class Sleepers	3	12
1st Class Saloon	2	8
2nd Class Saloon	2	8
Heating and Lighting	4	16
Baggage and Brake	5	20
Brake Vans.		
4 Wheel	49	98
8 Wheel	15	60
Total Cars	302	1,008

Miscellaneous.

Wrecking Cars 9

ENGINES**Passenger class:—**

4-4-0 Cylinder 17" X 24"	4
4-4-0 Cylinder 19" X 24"	3
4-6-0 Cylinder 18" X 24"	13

Freight class:—

2-6-0 Cylinder 17" X 24"	43
2-6-0 Cylinder 19" X 24"	14
2-6-0 Cylinder 16" X 24"	27

Shunters:—

2-5-2 Cylinder 14" X 24"	13
0-6-0 Cylinder 16" X 24"	4
2-6-4 Cylinder 17" X 24"	2

Total Engines 128

TENDERS

4 Wheel	3
8 Wheel	83
6 Wheel	26

Total Tenders 112

COMPARATIVE TABLE OF ROLLING STOCK

	1911	1912
Passenger Cars and Brake Vans	294	302
No. of Axles	1068	1098
Freight wagons of all classes	2868	2974
Tonnage capacity	57831	60555
Locomotives of all classes	124	123
Weight in Tons	5067	

Note:—Four Freight cars added to list hitherto not on register.

NEW MACHINERY ERECTED

Locomotive and Car Works.—Reserve steam Engine and Dynamo for Electric power house; Pneumatic moulding machine for Foundry; Block for the manufacture of pressed steel Bogies; Pneumatic plant and piping for car bogie and frame rivetting; Two sliding, surfacing and screw cutting lathes; One Bolt screwing and nut tapping machine; Two wood trimmers, and saw sharpener; One mortising and Boring machine.

General.—Vertical Boiler 4' 9" Dia. X 12' made for K. P. E. shops; All shops Tongshan works whitewashed; Erecting and Boiler Shops repainted; Timber columns of Loco Works Smith shop replaced by steel columns; Depth of South well increased by 15'.

Remarks.—Owing to the unsettled state of the country early in the year, and the large number of unemployed Southerners in Tongshan in poor circumstances, who showed no signs of moving to other places owing among other reasons to there being no or very little demand for labour anywhere in China, it was decided to re-engage these men in the railway works and so avoid the risks of local disturbance. To find these superfluous hands work, six 19" mogul engines were put in hand with what material was in stock. Boiler tube fencing, electric light standards, and other work not calling for any great degree of skill were undertaken.

Delay was caused to a lot of work put in hand during the year, owing to the unusual length of time taken to fill indents calling for material from England attributable to the succession of strikes in that country.

As regards locomotives the six mentioned above were put in hand two of which are to be fitted with the Phoenix superheater. Owing to the delay in receiving material, it is improbable the first of these will be on the rails before June, the others following at intervals of a month. A shunting engine in every possible respect similar to the standard light mogul engine was ordered from the North British Locomotive Co. It is hoped that this engine may be adopted as the standard heavy shunter required by the line. The fitting of train engines and 74 class with train heating gear was proceeded with, so before long the boilers carried for this purpose in the Brake vans may be dispensed with and the space utilized for baggage.

Want of power was felt during the exceptionally heavy traffic in the autumn.

The boilers of 58 and 74 class and those of six engines of 15 class will now have to be renewed, as these engines pass through the Shops and provision is being made for this. Boiler renewal and spares will keep the Boiler Shop constantly employed during the next three or four years.

With reference to coaches it having been decided to improve the express between Peking and Tientsin, six third class coaches with teak bodies, battened seats, Westinghouse heating, and Electric light were put in hand. The mail between P. K. and S. H. K. to be improved by seven improved oregon bodies being fitted to third class coaches provided with Westinghouse heating gear and Electric light. These cars to replace those of old design now in service.

Improved electric light fittings for coaches are being introduced.

As regards freight stock construction, little of this work was undertaken. Pressed Steel bogies were successfully manufactured during the year, but have not yet gone into service. The design of frame and body of 30-ton cars was made similar to the cars supplied the Tsin-Pu Railway N.S. from Europe.

A Valiant type of fire engine similar to many in use in English railway Shops was obtained for the protection of the Works.

A pneumatic plant for coach and car frame rivetting and any bogie rivetting necessary, is now being put down in the car works. This it is hoped will reduce costs of work.

The machinery and boilers of the ferry boat "Liaotung" were overhauled, and the necessary repairs and renewals effected.

A tank Locomotive for the Hulutao Harbour Works was erected for them by Kao-Pan-Tze Shops.

TRAFFIC DEPARTMENT.

Train miles run for Revenue . . .	2,273,243
Train miles run for Construction and Maintenance . . .	83,862
Number of Passengers carried . . .	3,495,707
Number of Tons of Freight carried . . .	3,450,393
Passenger Mileage . . .	217,554,996
Ton Mileage . . .	299,419,493
Total "Passenger Ton" Mileage . . .	570,974,489

Average number of men employed under Traffic Manager including Police Force about 1,131 . . . 2,836

TELEGRAPH DEPARTMENT.

Length of Wires.—Tungchow and Tungchow Junction, Miles 16.65. Chienmen and Yingkow (Double Wires) 1043.50. Tientsin and Shanhai-kwan (Single Wire) 175.54. Koupangtzu and Fengtien (Double Wires). 214.50. Hsinminfu and Fengtien (Single Wire) 37.37. Tientsin City and Hsiku 4.00. Tientsin Central and Tientsin East (Six Wires) 16.26. Tientsin and Tongku (Telephone) 27.00. Fengtai and Loo-kouchiao 3.85. Total miles 1538.67.

Electric Staff Wires.—Chienmen and Fengtien and Yingkow, Miles 521.75. Number of Messages sent, Service 188,484. Number of Messages sent, Outside 5,146. Total 193,630.

Average Number of Employees 371. Number of Telegraph Stations, 77. Number of Recorders in use 123. Number of Electric Staff Stations 70. Number of Electric Staff and Tablet Apparatus, 138.

EASTERN EXTENSION, ETC., TELEGRAPH COMPANY

The seventy-ninth half-yearly ordinary general meeting of the Eastern Extension, Australasia and China Telegraph Company, Limited, was held under the presidency of Sir John Wolfe Barry, K.C.B. The general manager and secretary (Mr. F. E. Hesse) having read the notice convening the meeting and the auditors' report,

The Chairman said: The gross receipts for the half-year to Dec. 30 amounted, in round numbers, to £379,000, against £359,000 for the corresponding period of 1911, showing an increase of £20,000. Nearly £4,000 of this increase was derived from additional reserve fund investments, and the remainder (£16,000) was due to growth of traffic spread over the whole of the company's system. The working and other expenses amounted, in round numbers, to £154,000, against £159,000 for the corresponding period of 1911, showing a decrease



Head Office, Chinese Government Railways, Tientsin.

of £5,000, partly due to the expenses attending maintenance of cables having been nearly £2,000 less last year than in 1911, and partly to the general expenses of stations having been debited in 1911 with the cost of new relay and other apparatus, for which there is no corresponding item in the accounts for the past half-year. Comparing the figures for the whole year, the following satisfactory results are seen: The gross revenue for 1912 amounted to £747,000, against £689,000 for 1911, showing an increase of \$58,000, while the gross expenditure for the past year was within a few hundred pounds of the expenditure for 1911. The net profit for the past half-year was roundly £206,000, and after adding £56,000 brought forward from the previous half-year, there remained an available balance of over £262,000. The usual quarterly interim dividends of 2s. 6d. per share were paid during the past year, and it is now proposed to distribute a like amount to-morrow, making a total dividend of 5 per cent. for the year. It is also proposed to pay a bonus of 4s. per share, or 2 per cent., making a total distribution of 7 per cent. for 1912. After making the usual additions to the maintenance, ships', insurance, and depreciation funds, £100,000 of the revenue balance has been transferred to the general reserve fund, making, with the contribution of £75,000 for the previous six months, a total addition to that fund for 1912 of £175,000, against £125,000

for 1911. On the other hand, the general reserve fund has been debited with £50,000, as a further provision on account of investment fluctuations, making a total provision against depreciation of £200,000, which was practically the amount of depreciation on Dec. 31 last, when the printed accounts were made up. Since that date, however, the depreciation, unfortunately, has further increased by about £7,000, which will be dealt with during the current year.

THE NEW CABLES TO THE FAR EAST.

The general reserve fund has also been debited with £86,700, the amount expended up to the end of last year in connection with the manufacture and laying of the first section of the new cables between Colombo, Penang, Singapore, and Hongkong, to which I referred when I last had the pleasure of addressing the shareholders. The cable which the Eastern Telegraph Company have arranged to lay between Aden and Colombo to connect with our new cables will probably be completed towards the end of the current year, and our further sections between Penang and Hongkong are expected to be laid and opened for traffic in the early part of 1914. The cost of our new cables will amount to about £750,000, which will be charged against the general reserve fund. The revenue balance carried forward for 1912 amounts to £27,000, against £23,000 carried forward in 1911.

GOTO ISLAND CORAL INDUSTRY.

In connection with the Goto Island coral industry, an official of the Nagasaki Kencho who recently visited the island is quoted as stating that 469 boats have their base at Tomiye, Goto Islands, and are registered there, but the number actually engaged exceeds 700.

The value of the season's catch last year was Yen 375,000, while that for May alone of this year amounts to yen 300,000. A high figure is expected to be reached this season in consequence, although it must be said that May is always the best month. This improvement is attributed to the fact that, whereas formerly a boat carried only one net, now each occupant of the boat has a net of an improved description. The boats now in use cost about yen 700 each and the annual upkeep, including nets, of each boat, is estimated at yen 300.

The future of the coral fishing industry in Japan is looked upon with pessimism by some people in view of the large number of boats now operated, but judging from the experience of Italy, off the coasts of which coral has been regularly sought for 500 years and there is still a good yield, Japan which has for only half a century exploited this source of wealth should have a bright prospect before it. As beds are worked out so new ones must be sought and there is every reason to believe that they can be found.

CHINESE NAVAL DISTRICTS

In order properly to guard the coast line, the Board of Navy have divided the coast into three Naval Districts. In each of the Districts, a District Headquarters will be established. They are as follow:—The Northern Naval District, extends from the Yalu River to Chefoo and the mouth of the Pei-ho. The District Headquarters is to be at Chinwangtao. The Central Naval District is to extend from Chefoo to Santuao, Fukien, and the Headquarters is to be at Chungmin Island. The Southern District starts from Santuao to the Chu-kiang, or Pearl River of Kwangtung, and the Headquarters is to be at Ki'ungchowfu.

SHANGHAI-NANKING RAILWAY

ANNUAL REPORT AND ACCOUNTS

Mr. M. Y. Chung, Managing-Director of the Shanghai-Nanking Railway, in presenting the annual report and accounts, writes:—The Annual Accounts and the Departmental Reports for the calendar year of 1912, which I have much pleasure in submitting herewith, will be read, it is believed, with gratification.

The material progress made in the operation of this Railway is modestly set forth by the General Manager in his report. The tabulated statement given in it shows, at a glance, the steady yearly increase in the amount of Net Earnings since the Open Line working began in 1908; while the indirect benefits and improvements, which the country served by the Line has begun to enjoy are also briefly noticed.

The working of the Line and the results obtained during the period under review are discussed in greater detail in the several reports by the Chief Accountant and the other Heads of Departments, which will be found to contain much matter of technical and general interest.

The capacity of the Line has been taxed to its extreme limit, it would seem, during the whole year with a slight slackening only during the hot season. Due acknowledgment should, therefore, be made, as remarked by the General Manager in his concluding paragraph of the very good work performed by all the officers and employees of the Line, Chinese and Foreign, including the General Manager himself, under somewhat trying conditions, owing to the necessity of handling the enormously increased passenger and goods traffic, including the movement of large bodies of troops and paraphernalia from time to time, without a corresponding increase of rolling-stock and adequate equipment to meet the ever growing demands upon the Line.

The result of the year's work, therefore, must be considered gratifying; and as there is good prospect of securing additional rolling-stock in the not distant future, the General Manager's hope as to the Line earning its guaranteed interest may be realized by the end of the current year.

REPORT BY THE GENERAL MANAGER

The report of the General Manager, Mr. A. W. U. Pope, C.I.E., is as follows:—The Annual Accounts for the Calendar year 1912, are herewith submitted. Comment is frequently made regarding the loss to the Chinese Government in having to make up annually a certain amount representing the difference between the Interest due on the Capital Loan for the construction of this line and the amount of money paid towards it by the Net earnings, due to the working of the line; in other words the annual deficit. The figures given below show the annually diminishing deficit to be made up since the opening of the Railway for traffic, and they should convince those who peruse them impartially that the progress made by the Railway towards the full payment of its, so to speak, guaranteed interest has been consistent, very considerable, and quite in proportion to the results achieved by similar undertakings in the East, in fact anywhere.

Year.	Total of interest charges to be made up. (This varies on account of Exchange.)	Net Earnings made by Railway.	Annual Loss to Chinese Government.
1908	\$ 1,692,333	\$517,815	\$1,174,518
1909	1,662,635	581,567	1,081,068
1910	1,564,850	627,671	937,179
1911	1,548,056	760,886	787,170
1912	1,386,909	A971,149	B 415,760

(A) This would have been \$200,000 better if the Rolling Stock asked for eighteen months ago had been supplied.

(B) This would have been \$200,000 less for the same reason.

A certain Power which has built 30,000 miles of Railway in the East most successfully; and is making a very handsome profit from them lays it down as a fixed policy that Capital spent in constructing a Railway is well spent, and a sound investment if it earns its guaranteed interest, on the money borrowed, by the fifth year after the Railway has been open to public traffic. This Railway has been open four years; and is in easy sight of such a state of affairs; nay would now be actually paying 5% if it had the Engines and rolling stock it has asked for some time back, and if it was not so very hard hit by exchange.

Similarly a just appreciation of the unique difficulties of Likin, shortness of rolling stock, discriminative competition by river and creek will, I feel sure, convince those accustomed to judge Railway results that the Administration has not neglected its opportunities.

A great deal of course depends on the standard of business aimed at, and it would be well to bear in mind that in accordance with the explicit terms of its Loan agreement this Railway has been worked, as far as it can be, according to the best modern practice. Thus the Shanghai-Nanking Railway is unique in China (I speak under correction) in assuming the position of Legal Bailee for the time being, with reference to its traffic both Coaching and Goods and the property entrusted to its charge for carriage; as all Railways in other countries are obliged to do by law; and in taking upon itself all the responsibilities entailed by the Board of Trade regulations for safety and care as far as they can be made applicable to the circumstances of the country. This fact alone will make it clear to all experienced readers that such responsibilities mean a very gradual evolution towards paying conditions in a new country; and that, when reached, the finance of the Railway will be on a sound and abiding foundation.

In harmony with the above remarks it has been the settled policy of this Railway, a policy warmly supported by the Managing Director, to place the development of the country, the nursing of the commercial welfare of the big towns, in other words the indirect profits and advantages to the country first and foremost; realizing that frequent means of communication between places of business, ready and safe means for the transport of merchandise and money, the fostering of all facilities for "business" makes "business" on the principle that "often the sight of means to do ill deeds make ill deeds done" and also good ones. Such openings up of business increase the power of taxation, increase the value of land and generally build up cities. In support of the indication that our efforts in this gradual development of the business possibilities in fact our building up the indirect profits (which must act forcibly on the direct profit bearing possibilities of the Railway, as Night follows Day) are meeting with considerable success, I quote the following written statements from Chambers of Commerce, gentry, merchants of Soochow, and Wusih.

"Improvements in local and business conditions at Soochow since the opening of the Shanghai-Nanking Railway to traffic.

1.—Since the establishment of the railway station at Soochow the vast tract of waste land in the vicinity of Chong Men and Chi Men has greatly risen in value and modern buildings have been erected thereon along the approach road to the Chong Men street. All sorts of shops, stores and other houses have been opened and the place has rapidly become a flourishing and prosperous market and is still developing.

2.—Since the construction of the modern macadamized road approaching the station great facilities have been offered to the travelling public and a large class of people has been able to find a means of living by pulling rickshas, driving carriages, keeping stalls, etc., a circumstance which has had an indirect bearing on the maintaining peace and good order.

3.—Owing to the rapidity of transportation by rail the products of native industry such as sea products, silks, embroidery, etc., can be rapidly transported from the interior for sale and thus the business has been increased five or six fold in comparison with days of steam-launch locomotion.

4.—People are greatly benefited by the rail-borne post so that a return post may be expected in a day's time in communicating with Nanking, Chinkiang and other places along the Line.

5.—Consequent upon the building of the railway has come the establishment of telephones and electrical lighting, thereby greatly improving the conditions of life by affording safety in the streets at night and rapid communication, such as we have never enjoyed before.

6.—The splendidly comfortable coaches of your railway, the good treatment and civility to the passengers as well as other perfections leave nothing to be desired. These are entirely due to the efforts of the Shanghai-Nanking Railway which has rendered great services to China, for which we feel greatly indebted. There is only one thing we have to point out that since the opening of the T. P. R. the goods traffic on the Shanghai-Nanking Railway has been steadily increasing but owing to the shortage of wagons of the latter the traffic resulting occasionally congregated or blocked thereby in inevitable thefts. Hoping the General Manager of the Railway is aware of existing imperfection and will see his way to enquire into the matter and to purchase the additional wagons so that the merchants will feel greatly encouraged by giving their transportation to the railway entirely.

The products and business condition in Wusih.

1.—COCOONS AND SILKS. Before the establishment of railways the transportation of them by ships from Wusih to Shanghai takes 4, 5 or 6 days, now it takes only 12 hours, including the time for loading and unloading.

2.—RICE AND BARLEY. As above.

3.—SUNDRIES. As above.

4.—WOOD AND IRON MATERIALS. The transportation of them by ships from Shanghai to Wusih takes 5 or 6 days; but that by rail for the same distance takes only 6 hours.

5.—COAL AND PETROLEUM. As above.

6.—THE PASSENGERS. The launches may take them to Shanghai in 24 hours and the native junks may do so in 4 or 5 days. The rail can take them to Shanghai in 3 hours only.

7.—THE BUSINESS CONDITION. Before the establishment of railways, the income and outcome amounts not so much as 10,000,000. Now they have 20,000,000.

8.—COST OF LAND. Before the establishment of railways, each mow cost \$20 or \$30. Now each mow along the maloo costs \$2,000.

9.—STYLE OF HOUSES. Before the establishment of the railways, the houses are in Chinese style. Now they are over 20 factories and godowns.

10.—THE ELECTRIC LIGHTS AND TELEPHONE. Two companies are started after the establishment of the railways.

11.—THE HOTELS. Before the establishment of railways, not a single one is built. Now there are over 20 places.

These letters and remarks, spontaneous as they are, coming from the actual people concerned, are a complete justification for the contention that the Shanghai-Nanking Railway

being a commercial enterprise, undertaken for the express purpose of serving the civil and military needs of the country may take to itself an amount of credit for indirect profits, more than sufficient to make up the balance between what it has actually directly paid and the 5% interest on the borrowed capital; and further that the actual payment of its direct 5% profit on its capital is a foregone sequence on these facts.

I hope I have made it clear that this Railway is doing its duty as far as the civil needs of the country are concerned and I think the events of the past year connected with the revolution have shown by the acknowledgment of the authorities, often and unstintingly expressed, verbally and in writing, that it fully did its duty in the time of strife and war in carrying the troops efficiently and in allowing the entire free movement of the people in safety when they were anxious to escape from the actual scenes of fighting. Competent Chinese authority has placed great value on this last fact as being one of the principal causes of the ungrudging sympathy and acquiescence in the local events of the revolution by the population at large.

I will close this Report with a very hearty acknowledgment of the work done by the officers and staff during the past year 1912. Extraordinary night and day work suddenly fell upon a staff not sufficiently recruited for day work, owing to the introduction of an oft resisted measure of reduction, and only those who experienced it can realize what stress of work the Officers and men, Chinese and Foreign, went through in the way of long hours, heavy work, attended often with considerable risk, and I commend them one and all to the special attention of the Managing Director, the Corporation and the Chinese Government.

REPORT BY THE CHIEF ACCOUNTANT

Mr. H. Middleton, Chief Accountant, reports as follows:—

Coaching Earnings.—As was anticipated the budget estimate has been largely exceeded. Coming to a detailed analysis of the results for the year, the following points are of interest. The details given below state approximately the proportions between the 1st and 2nd (combined), 3rd and Coolie classes:—

Class	Earnings		Passengers carried		Vehicles in use	
	Amount	Percentage	No.	Percentage	No.	Percentage
1st and 2nd	\$ 318,516	14	220,038	5	21	24
3rd	1,639,113	75	4,091,836	83	40	57
Coolie	240,407	11	569,602	12	16	19
Total	\$2,198,126	100	4,881,476	100	86	100

The following table gives the number of passengers carried on the Main Line during the past three years:—

	1st	2nd	3rd	Coolie.
1910	16,622	134,913	2,977,813	472,233
1911	13,770	115,122	3,053,107	508,510
1912	17,563	114,749	3,076,903	560,602

There is a large increase in the numbers carried under 1st and a small decrease under 2nd class as compared with the previous year. For 1st class the amount earned also shows a large increase. Of the total increase of \$32,000 no less than \$29,000 came from the traffic between Shanghai and Nanking. For 2nd class against a total increase of \$22,000 there is an increase of \$38,000 between Shanghai and Nanking alone as compared with the previous year, decreases in the short distance traffic being responsible for the difference. For 1st class generally speaking, the short distance traffic shows a shrinkage as compared with the previous year. This tendency is even more marked for 2nd class. Third class traffic shows an increase of \$192,000 in round figures, a result which is very satisfactory indeed. Coolie class continues to show a marked development, the increase being \$48,000.

The Woosung line continues to show the marked development of the past two years. The following table compares the results for five years prior to the introduction of the reduced fares on the 1st January, 1910, and the three succeeding years:—

	At old fares					At reduced fares				
	1905	1907	1909	1911	1912	1910	1911	1912	1913	1914
Total number of passengers	544,296	486,081	412,259	88,598	88,598	886,472	981,510	1,102,658	99,006	99,006
Amount earned	\$113,510	98,342	88,598	88,598	88,598	77,611	87,302	99,006	99,006	99,006

The following table shows the results for carriage of Specie during the past three years:—

	1910	1911	1912
Total value of coins carried	\$53,210,419	73,176,870	107,878,079
Weight	26,113	37,202	57,680
Amount earned for freight	\$ 12,000	13,200	12,000

The receipts under the head "Passengers' luggage" show a fall. Parcels traffic shows an increase of nearly 140%, and heads V and IX also show considerable development.

Goods Earnings.—The actuals have more than exceeded the estimate.

The "Up" traffic (i.e. from Shanghai to Nanking) produced under 30% of the total.

Sundries.—The actuals proved to be \$11,000 less than the budget estimate for reasons beyond our control.

Working Expenses.—Although the aggregate amount considerably exceeds the provision made in the budget estimate, the percentage works out at exactly the same figure, viz:—64.70%. The percentage for the year shows an improvement of 2½% over that of the previous year. The percentage for the 1st half of the year works out to 59.29% and for the 2nd half to 68.60% or an increase of 9%.

It will be noticed that in most of the Abstracts the charges for salaries are less than in

1911. This is mainly due to the bonuses granted to the staff in that year for services rendered in connection with the Revolution.

Abstract A.—Shows an excess of about \$31,700 over the budget, though the percentage is 0.27 lower. The saving of \$6,400 under head II is largely due to a considerable quantity of permanent-way material having been returned to Stores. The saving of \$4,000 under head III is due to certain work having been deferred in order to make funds available under head IV which shows an excess of nearly \$23,500. Of this sum \$4,000 is covered by the saving under head III, the remainder being due to a number of small works, such as the repairs to the jetty, platforms, footbridge and Station Master's house at Chinkiang, \$5,000, the match with electric lighting at Markham Road, \$3,500, alterations to the Wusih godowns \$5,000, and four or five other small works, costing not more than \$1,500 each. Under head VI the excess of \$20,800 is due to the bridge it was found necessary to build at mile 146¼ and to the electric train staff installation between Shanghai and Soochow. The cost per mile maintained shows an increase of \$47.

Abstract B.—Shows an excess of \$52,000 round over the budget, but the percentage is 0.54 lower than was anticipated. The excess is due to the increased cost of heads III and V caused by the increased train service.

Abstract C.—Shows an excess of \$20,500 round over the budget estimate. This is principally due to the excess of \$3,000 under head III caused by the increased train service and to the excess of \$15,000 under head IV caused by the alterations to rolling-stock mentioned in the Locomotive Superintendent's report. The cost per train mile has increased by nearly one per cent.

Abstract D.—Shows an excess of \$88,000 over the budget which is made up by excesses of \$8,700 under head II, \$2,900 under head III, \$22,500 under head IV, \$1,900 under head V and \$2,500 under head VI. There is a saving of \$4,000 under head VII. The excess under head IV is larger than the original budget provision. The percentage, viz: 13.83 is 1.57% higher than was anticipated.

The cost per train mile has increased by 1.38 cents.

Abstract E.—Shows an excess over the budget estimate of \$5,400. Owing to the increased earnings the percentage is all but 2% lower than what was anticipated.

Abstract F.—Calls for no comment.

Abstract G.—Shows an excess over the budget estimate of \$42,600. This is principally due to the heavy loss under the head "Discount" which amounts to \$30,400 more than in the previous year. The rates at which small money could be disposed of proved to be the highest we have yet experienced, averaging 14.54% for the year, i.e. more than 1½% higher than in the previous year. As we recover 10% from the public, our loss amounted to 4.54% against 2.02% in 1911. Bad debts written-off account for \$5,100. The increase in the amount of Commission paid was \$5,000, and the loss on Exchange due to the rapid rise throughout the year was \$2,100.

Cash Balances.—Of the sum of \$52,251 outstanding at the close of 1911 for uncashed bank notes, \$10,520 were realized during the year, leaving the balance of \$41,731 at the close of the year. Of this balance \$450 have since been realized to date.

Net Earnings.—These proved to be \$101,500 higher than was anticipated and represent a return of 3.50% on the nominal value of the loan bonds. The improvement is more than 1% as compared with the previous year, and is partly due to the increased net earnings and partly to the high rates of exchange which prevailed at the dates on which the interest charges were paid.

Statistics.—Those for passenger traffic show a marked improvement under items 2, 3 and 5 of the analysis given elsewhere though item 7 shows a considerable fall.

CAPITAL AUTHORISED AND RAISED BY DEBENTURE STOCK

Under Loan Agreement.	Nominal value of bonds.	Rate of issue	Amount of discount	Actual amount realised.	Actual sum realised in local currency.	Remarks.
£	£		£	£	Tls. c.	
First issue	2,250,000	90%	225,000	2,025,000	14,482,665 81	Interest is payable at the rate of 5% per annum on the nominal value of the bonds.
Second "	650,000	95½%	29,250	620,750	4,276,798 65	
Total	2,900,000		254,250	2,645,750	18,759,464 46	

CAPITAL BALANCE SHEET AT END OF DECEMBER, 1912

Heads of Accounts.	Debit.		Credit.	
	Taels.	Cts.	Taels.	Cts.
Capital I.	£2,025,000		14,482,665	81
Capital II	£ 620,750		4,276,798	65
London Account.	£ 966.13.6	6,712 54		
Hongkong and Shanghai Bank.		3,095 53		
Interest on Loan		1,819,159 61		
Commission on Purchases in England	£34,352.3.8	243,582 81		
Commission on Purchases in China		202,496 88		
Commission—General		8,299 45		
Transfers, Revenue.			32,411 07	
Nanyang College		10,000 00		
Exchange.		68,451 34		
Likin Confiscation		3,825 64		
Final Heads as per Schedule A.		17,626,681 91		
Suspense Accounts		285,142 09		
Capital Outlay, Woosung Section.		1,026,441 86		
Land Exchange		9,247 34		
Chinese Government Advances.			2,521,261 47	
Total Shanghai Taels	21,313,137 00		21,313,137 00	

SCHEDULE A, CAPITAL FINAL HEADS

Heads of Account.	Expenditure during the year.		Expenditure from the commencement of operations.	
	Tls.	Cts.	Tls.	Cts.
I.—Preliminary Expenses	7 00		16,696 63	
II.—Land, Main Line	£250,000		1,835,065 43	
II.—Land, Miscellaneous			1,998 31	
III.—Formation	1,258 00		1,714,866 43	
IV.—Bridgework	1,785 64		1,966,356 91	
V.—Fencing			48,963 03	
VI.—Electric Telegraph	2,075 01		69,282 57	
VII.—Track	8,688 24		4,842,218 19	
VIII.—Stations and Buildings	33,850 85		2,292,925 09	
IX. { Plant	1,761 51		422,143 60	
{ Rolling Stock	3,855 85		2,636,041 55	
X.—General Charges	44 75		1,780,124 17	
Total Shanghai Taels	24,715 65		17,626,681 91	

Revenue Balance Sheet at end of December, 1912

Heads of Account.	Debits.		Credits.	
	Dollars.	Cts.	Dollars.	Cts.
Hongkong and Shanghai Bank	* 98,659	57		
Imprests.	1,340	89		
Transfers, Capital.	44,398	69		
Suspense Heads	97,161	72		
Chinese Government Advances.			(a) 241,560	87
Grand Total Mexican Dollars.	241,560	87	241,560	87

* This amount includes \$41,731 retained in the Railway cash safe on account of Nanking and Soochow Government bank notes unrealizable at end of December 1912. Another \$450 have been realized to date.

(a) These are net figures after adjusting the difference between the "Interest on Loan" and "Net Earnings" as a charge to this head.

DR.	REVENUE ACCOUNT for the year ending 31st December, 1912.										CR.
EXPENDITURE.					EARNINGS.						
Year ending December, 1911.	Per cent on gross receipts.	Year ending December, 1912.		Per cent on gross receipts.	Year ending December, 1911.	Per cent on gross receipts.	Year ending December, 1912.		Per cent on gross receipts.		
To Maintenance of Way											
257,321 30	11.43	Works and Stations.	A	268,671 81	10.04	1,944,133 63	86.37	By Coaching Traffic.	H	2,249,045 13 84.05	
399,641 69	17.75	„ Locomotive Expenses	B	459,895 26	17.19	1,283 83	.06	„ Telegraph Earnings.	..	1,214 66 .04	
		„ Carriage and Wagon				239,162 61	10.62	„ Goods Traffic.	I	387,758 85 14.49	
106,655 52	4.74	Expenses	C	135,783 65	5.07	Nil		„ Flotilla Traffic	J	Nil	
298,539 46	13.26	„ Traffic Expenses . .	D	370,080 19	13.83	66,492 10	2.95	„ Sundries	K	37,924 27 1.42	
361,476 91	16.06	„ General Charges . .	E	358,414 42	13.39						
422 70	.02	„ Flotilla Expenses . .	F	372 00	.01						
66,128 97	2.94	„ Special Expenses . .	G	111,577 06	4.17						
1,490,186 55	66.20	Total		1,704,794 39	63.70						
760,885 62	33.80	„ Balance, Net Earnings		971,148 52	36.30						
2,251,072 17	100.00	Total Dollars		2,675,942 91	100.00	2,251,072 17	100.00	Total Dollars		2,675,942 91 100.00	

ABSTRACT A.

Previous year.	Maintenance of Way, Works & Stations	Current year.
\$ c.		\$ c.
I.—General Superintendence:—		
31,343.97	Engineer's salaries	27,459.03
6,545.88	Allowances of ditto., including travelling	5,412.71
21,760.70	Salaries of Subordinate Superintendents	20,168.45
855.33	Allowances of ditto., including travelling	789.48
12,293.11	Salaries and allowances of Office Staff	11,425.58
3,155.81	Office expenses	3,457.54
75,954.80		68,712.79
II.—Maintenance and renewal of Track:—		
98,442.97	Wages	89,332.46
23,184.46	Materials	5,800.33
121,627.43		95,132.79
III.—Maintenance of Bridges, etc:—		
4,664.52	Bridges and tunnels	5,578.61
8,563.61	Earthwork, fencing, roads, etc.	1,803.53
13,228.13		7,382.14
IV.—Maintenance of Buildings and Fixtures:—		
Buildings and fixtures, excluding staff		
32,123.44	quarters	55,938.75
2,059.50	Staff quarters	2,522.13
—	Joint stations	—
34,182.94		58,460.88
V.—Maintenance of Tools and Plant:—		
3,039.70	Tools and plant	3,868.01
313.61	Furniture and instruments	38.92
556.56	Electrical plant	722.53
3,909.87		4,629.46
6,329.11	VI.—New Minor Works:—	31,606.61
VII.—Miscellaneous:—		
756.58	Plantations	216.00
131.69	Loss on stores	161.46
4,443.85	Carriage of stores	2,692.60
—	Loss or gain by exchange	—
5,332.12		2,747.14
260,564.40		268,671.81
3,243.10	Supervision charges debited to Capital A/c.	—
257,321.30	Total...	268,671.81

Mean mileage maintained by Revenue.	Miles.
Double line	Nil.
Single line	212.30
Sidings	31.18
Total single track, including sidings	243.48

Cost per mile—	1910	1911	1912
	901.77	1,056.72	1,103.47

N.B.—The embankment and bridges are for a double line as far as mile 53.1564' (Soochow), though only a single line of rails has been laid and maintained.

ABSTRACT B.

Previous year.	Locomotive Expenses.	Current year.
\$ c.		\$ c.
I.—General Superintendence:—		
7,308.56	Salaries of Superintendents	6,799.97
1,270.60	Allowances of ditto., including travelling	2,230.50
17,400.34	Salaries of Subordinate Superintendents	15,527.28
556.05	Allowances of ditto., including travelling	583.74
11,252.02	Salaries and allowances of Office Staff	11,055.06

2,165.01

39,952.58

20,730.51

76.60

8,621.39

44.51

1,297.23

30,770.24

II.—Running Expenses:—

Wages of drivers and firemen 19,797.94

Allowances of ditto. 7.00

Labour charges on running engines 8,332.81

Clothing 88.50

Contingent expenses 1,142.02

29,363.27

1911.

1912.

Tons. Cwt.

III.—Fuel:—

Tons. Cwt.

222,816.98

25,358. 8

Coal 31,214. 9 268,696.42

572.47

Bamboos, baskets, etc. 409.30

2,818.29

Wood. —

Wages 2,755.06

226,207.74

271,860.78

12,093.63

IV.—Water:—

13,465.12

19,598.33

V.—Running Stores:—

27,158.72

26,323.00

VI.—Maintenance of Locomotive Engines:—

34,535.49

Wages. 28,517.47

60,858.49

Materials 37,752.97

66,270.44

63.60

VII.—Maintenance of Plant and Machinery:—

754.13

Wages 806.52

149.51

Materials 2,103.71

967.24

Furniture and Fittings 100.90

602.80

3,011.13

VIII.—New Minor Works:—

1,089.91

IX.—Miscellaneous:—

2,828.56

Loss on stores 1,171.23

5,732.69

Carriage of stores 8,350.15

29.39

Exchange 24.93

8,590.64

9,546.31

399,641.69

Total... 459,895.26

	1910	1911	1912
Cost per Engine mile in cents.	33.93	35.28	35.31
Coal consumption per Train mile (weight in lbs.)	65.06	62.71	64.88
Coal consumption per Engine mile (weight in lbs.)	53.81	50.15	53.68
Coal consumption per Train mile (cost in cents)	25.78	24.60	24.93
Coal consumption per Engine mile (cost in cents)	21.32	19.67	20.63

ABSTRACT C.

Previous year.	Carriage and Wagon Expenses.	Current year.
\$ c.		\$ c.
I.—General Superintendence:—		
7,781.49	Salaries of Superintendents	8,314.23
1,625.93	Allowances of ditto., including travelling	2,376.21
9,385.08	Salaries of Subordinate Superintendents	8,551.93
278.01	Allowances of ditto., including travelling	311.51
7,077.43	Salaries and allowances of Office Staff	6,933.69
975.73	Office expenses	1,030.68
27,123.67		27,518.25
II.—Maintenance of Vehicles:—		
Coaching		
14,300.14	(a) Wages	16,107.86
34,028.54	(b) Materials	25,253.45
		41,361.31

	Goods		6.80	Carriage of stores	92.30
5,478.06	(a) Wages	5,104.22	123.39	Exchange	75.28
15,846.93	(b) Materials	13,417.75			
10,368.87		18,521.97			
49,875.47		59,883.28	3,002.46		1,924.55
III.—Running Expenses:—			298,539.46	Total...	370,080.19
8,617.16	Labour	8,150.35		1910	1911
17,343.73	Materials	21,103.31			1912
51.99	Clothing	86.00	Cost per Train mile in cents	29.76	32.96
					34.34
26,012.88		29,339.66	ABSTRACT E.		
2,277.87	IV.—Minor Works:—	15,995.25	Previous year.	General Charges.	Current year.
	V.—Maintenance of Plant and Machinery:—		\$ c.		\$ c.
17.40	Wages	398.31		I.—London Charges:—	
178.00	Materials	918.23	4,739.49	Consulting Engineers' fees	4,640.67
24.76	Furniture and fittings	51.36	400.00	Auditors' fees	400.00
220.16		1,367.90	862.56	Office expenses	442.69
	VI.—Miscellaneous:—		6,002.05		5,483.36
1 048.77	Loss on stores	1,559.35		II.—Charges in China:—	
82.01	Carriage of stores	107.48		Foreign Commissioners and General	
14.69	Exchange	12.48	37,836.62	Manager	36,692.64
1,145.47		1,679.31	134,916.49	Chinese Department	127,698.41
106,655.52		135,783.65	59,255.85	Audit and Accounts	56,029.40
	1910	1911	10,252.19	Stores	6,024.63
Cost per Train mile in cents	12.39	11.77	17,530.52	Medical	15,541.55
		12.60	3,361.82	Rents	3,340.90
				Furniture and Instruments	
ABSTRACT D.			33.00	(a) Chinese Department	552.70
Previous year.	Traffic Expenses.	Current year.	402.45	(b) Other Departments	1,570.71
\$ c.		\$ c.	435.45		2,123.21
I.—General Superintendence:—				Office Expenses	
28,636.25	Salaries of Superintendents	23,333.23	3,096.52	(a) Chinese Department	5,877.50
8,637.93	Allowances of ditto., including travelling	4,267.76	6,737.41	(b) Other Departments	8,052.84
12,469.83	Salaries of Subordinate Superintendents	16,607.08	9,833.93		13,930.34
1,020.82	Allowances of ditto., including travelling	1,303.38	1,591.08	(a) Medicines	1,250.90
19,820.44	Salaries and allowances of Office Staff	19,792.51	11,058.29	(b) Hospital charges	13,510.95
6,503.33	Office expenses	7,268.19	12,649.37		14,761.85
77,088.60		72,572.65	1,106.59	Schools	1,336.13
II.—Station Staff:—			38,340.12	Police	40,682.72
134,099.24	Salaries	130,969.14	2,606.97	Advertisements	6,512.01
996.42	Allowances	1,475.63		Telegraph	
30.92	Office expenses	7.95	5,824.24	(a) Salaries and allowances	5,746.01
135,126.58		132,452.72	21,367.85	(b) Maintenance	17,501.28
			15,543.61		23,247.29
III.—Train Staff:—			349,493.77		347,921.08
18,269.05	Salaries	21,449.73		III.—Miscellaneous:—	
223.11	Allowances	151.08	5,119.12	Fire appliances and insurance premia	4,638.85
145.00	Running room expenses	295.00	667.28	Loss on stores	104.74
18,637.16		21,885.81	12.65	Carriage of stores	6.25
			620.72	Exchange	260.14
IV.—Traffic Stores:—			6419.77		5,009.98
19,982.72	Station and office stores	25,281.29	361,915.59	Less:—	358,414.42
575.28	Vehicle equipment	9,886.73	438.68	Supervision charges debited to Capital A/c.	
2,107.42	Fittings and furniture	7,808.98	361,476.91	Total...	358,414.42
22,665.42		42,977.00			
8,155.50	V.—Clothing:—	7,936.33		ABSTRACT F.	
14,351.24	VI.—Printing, Stationery and Tickets:—	16,042.47	Previous year.	Flotilla Expenses	Current year.
19,512.50	VII.—Handling Charges:—	20,901.11	\$ c.		\$ c.
	VIII.—Goods Agency Commission:—	53,387.55	418.50	I.—Working Vessels:—	
	IX.—Miscellaneous:—		4.20	Salaries and allowances	372.00
1,000.50	Clocks, etc.	1,496.87		Handling charges	
1,871.77	Loss on stores	260.10	422.70	Victualling	
				Total...	372.00

ABSTRACT G.

Special Expenses.

Previous year.				Current year.			
\$	c.	\$	c.	\$	c.	\$	c.
I.—Compensation:—							
		3,102	19	For goods lost or damaged	705	81	
		64	93	For personal injury . . .	47	20	
		759	73	For other claims . . .	2,373	05	
3,926	86	<u> </u>			<u> </u>		3,126 06
II.—Losses of cash and bad							
185	88	<u> </u>		debts written off.	<u> </u>		5,281 79
III.—Payments to other lines:—							
		—	—	Locomotive borrowed . .	—	—	
		279	00	Vehicles borrowed. . .	1,282	24	
279	00	<u> </u>			<u> </u>		1,282 24

18,047	62	IV.—Commission.	23,146	15
		V.—Discount on subsidiary		
43,328	89	coins.	73,748	84
—	—	VI.—Provident Institution,	—	—
		VII.—Miscellaneous:—		
	68 04	Law charges	133	65
	262 13	Rates and taxes	125	36
		Gardens	996	00
		Loss on light and base coins	20	00
	15 56	Exchange	2,116	11
	15 00	Miscellaneous	1,600	86
360	73		4,991	98
66,128	97	Total	111,577	0

ABSTRACT H.

Coaching Traffic.

Previous year.			First Class		Second Class		Third Class		TOTAL	
\$	c.	Single fare per mile	about 4 cents		about 2 cents		3rd about 1 cent Coolie about $\frac{1}{4}$ "		No.	Amount
I—Passengers	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Ordinary	44,200	74,047.67	147,202	193,233.47	4,013,289	1,582,577.32	4,204,751	1,849,858.46		
Coolie Class	—	—	—	—	569,602	240,496.86	569,602	240,496.86		
Government	1,677	6,263.60	5,995	9,663.65	59,416	32,685.13	67,088	48,612.38		
Privilege	28	49.30	452	447.02	13,763	1,846.73	14,243	2,343.05		
Excursion	4,799	12,958.65	15,625	18,308.20	5,368	1,014.89	25,792	32,281.74		
Excess fares		982.04		2,562.74		20,988.71		24,533.49		
Total	50,764	94,301.26	169,274	224,215.08	4,661,438	1,879,609.64	4,881,476	2,198,125.98		
Previous year	42,378	61,844.99	164,249	202,529.93	4,465,077	1,639,298.47	4,671,704			
Season tickets	7	165.00	17	85.00	674	1,531.30	698	1,781.30		
Previous year	2	18.00	16	139.00	613	1,513.85	631			
								2,199,907.28		
II.—Passengers' Luggage and Specie						Piculs	66,924	17,542.42		
III.—Government Baggage						"	68	20.00		
IV.—Parcels:—										
(a) For the Public						"	52,373	15,701.62		
(b) For Revenue						"	—	—		
V.—Horses, Carriages, Dogs, etc. (Ordinary)						No.	3,201	3,779.92		
VI.—Horses, Carriages, Dogs, etc. (Government)						"	334	391.55		
VII.—Special Trains						Train-miles	4,650	7,157.00		
VIII.—Trolleys						Trolley-miles	56	32.00		
IX.—Miscellaneous								3,513.34		
X.—Post Office								1,000.00		
Total								2,249,045.13		

N.B.—The Excess fares have been divided up between I, II and III class in the same proportion as the actual "Ordinary" traffic for these classes.

(a) The usual annual fee from the Post Office for 1910 was realised after the accounts for that year had been closed.

ABSTRACT 1.

Goods Traffic.

[illegible]

7.15	(c) For other Railway services	2,394	7.45
6,972.00		657,898	11,520.35
4,476.05	V.—Revenue stores, for all Depts. excepting coal	203,334	3,307.00
225,858.46		8,205,853	364,504.84
11,581.05	VI.—Livestock (Ordinary)	No.	
3,910.80	(a) Horses, cattle, etc.	22,922	17,582.50
	(b) Sheep, goats, pigs, etc.	8,718	2,716.95
15,491.85		31,640 *	20,299.45
	VII.—Livestock (Government)		
	(a) Horses, cattle, etc.	795	677.50
	(b) Sheep, goats, pigs, etc.		
		795	677.50
2,190.35	VIII.—Rents, demurrage, wharfage, stor- age, etc.		2,242.61
2 65	IX.—Miscellaneous		34.45
239,162.61	Total		387,758.85

N.B.—16.75 piculs are taken as the equivalent of a ton.

*The above are net figures after deducting rebates.

	1910	1911	1912
Rebates allowed	11,766	12,507	26,278

ABSTRACT K.

Sundries.

Previous year.		Current year.
\$	cts.	\$
200.75	Hire of locomotives	1,733.45
943.00	Hire of wagons	906.00
	Mileage and Demurrage on vehicles over	
2,376.70	other lines.	210.00
168.75	Advertising	259.90
3,961.19	Rents of houses and lands	661.40
10,180.45	Rents of refreshment rooms and cars	11,526.50
	Profits from Locomotive and Engineering	
30,615.00	Workshops	* 5,285.40
169.45	Sale of unclaimed and damaged goods	247.25
216.81	Unclaimed or unpaid salaries	215.89
3,670.15	Carriage and rickshaw permits and fines	4,003.30
4,032.46	Interest	4,724.25
	Sale of Revenue stores	
	496.60 Engineering 149.61	
2,017.14	Locomotive 2,719.54	
	22.31 Traffic. 33.39	
2,781.82	245.57 General — —	2,902.54
1,412.74	Miscellaneous	2,310.20
5,762.83	Exchange	7,508.99
66,492.10	Total	37,924.27

* Due to loss on the contract for the Tientsin-Pukow Railway coaches

Statement of Train Mileage

Previous year.			Current year.	
Miles.	Estimated Locomotive expenses. \$		Miles.	Estimated Locomotive expenses. \$
543,661	191,830	Train miles run for public traffic.	Passenger	446,858 157,785
65,262	23,028		Goods	176,530 62,332
284,908	100,529		Mixed	440,137 155,412
12,009	4,237		Light	14,170 5,003

		Train miles run for Locomotive Department		
		Train miles run for Maintenance		
905,840	319,624	Total train Mileage	1,077,695	380,532
7,840	2,766	Miles of assisting engines (actual distance)	3,476	1,227
		Miles of engines shunting and standing in steam for traffic purposes, calculated at 5 miles an hour	219,942	77,661
216,634	76,439	Miles run for Miscellaneous services (actual distance)	1,344	475
2,305	813			
226,779	80,018	Total Miscellaneous engine mileage	224,762	79,363
1,132,619	399,642	Total engine mileage	1,302,457	459,895

DISTRIBUTION OF PASSENGER AND GOODS MILEAGE

Passenger.	Miles.	Goods.	Miles.
Passenger train mileage . . .	446,858	Goods train mileage . . .	176,530
Light (passenger)	—	Light (Goods)	—
Proportion of Mixed mileage	355,086	Proportion of Mixed mileage	85,051
Do. Light mixed	10,157	Do. Light mixed	4,013
		Maintenance (Earnings from this source credited to Abstract K.)	—
Total	812,101	Total	265,594

NET REVENUE ACCOUNT for the year ending 31st December, 1912.

	DR	
	£	c.
To interest paid in London during the half-year ending June, 1912, £72,500, @ 2/9 ³ / ₈ and 75.1.	698,127	55
To interest paid in London during the half-year ending December, 1912, £72,500, @ 2/10 and 74 3.	688,781	56
Total	1,386,909	11
	CR	
By net earnings of the year as per Revenue Account,	971,148	52
By balance—being net loss.	415,760	59
Total	1,386,909	11

ACCOUNT OF TOTAL NET RECEIPTS

	Dr.
To net earnings for the half-year ended June, 1912	572,860.02
December, 1912.	39,287.60
To increase of balance at credit of Demands Payable.	12,148.12
debit London A/c.	1,20.42
To Government banknotes realized during the year	10,520.00
Total	995,025.06
	Cr.
By increase of balance at debit of Traffic Account.	2,910.24
Miscellaneous Advances	4,308.20
By reduction in balance at credit of Foreign Railways	1,906.14
By amount of net receipts.	948,221.48
Total	995,025.06

INTEREST ACCOUNT

	Dr,
To amount of net receipts as per account above	948,221.46
To balance—being excess of interest over net receipts	438,687.63
	<hr/>
Total	1,386,909.11
	Cr,
By interest paid in London for 1912 as per net Revenue Account above.	1,386,909.11
	<hr/>
Total	1,386,909.11

ANALYSIS OF THE WORKING RESULTS

For the year ending 31st December, 1912.

AVERAGE LENGTH OPEN 203.25 MILES

PASSENGER	1910.	1911.	1912.
Receipts from coaching traffic . \$	1,766,338	1,944,134	2,249,045
Receipts per mile open . „	8,690	9,565	11,065
„ per week . „	167	183	212
Passenger train-miles run . No.	742,479	735,991	812,101
Average receipts per passenger train-mile . \$	2.38	2.64	2.77
Number of passengers carried . No.	4,488,052	4,672,335	4,881,476

Average number of passengers per train-mile	No.	6.04	6.35	6.01
GOODS TRAFFIC				
Receipts from goods traffic, exclusive of demurrage on goods \$	205,548	241,353	385,516	
Receipts per mile open	1,011	1,187	1,897	
" " per week	19	23	36	
Goods train-miles run	No. 167,364	169,849	265,594	
Average receipts per goods train-mile	\$ 1.23	1.42	1.45	
Piculs of goods carried, excluding livestock.	Piculs. 4,637,942	5,268,144	8,205,853	
Average number of piculs per train-mile	Piculs. 28	31	31	
WORKING EXPENSES				
Cost per mile open	\$ 6,843	7,332	8,388	
" " per week	131	141	160	
Total working expenses for both goods and passengers, deducting from them telegraph, special and mis- cellaneous receipts and demurrage on goods	1,344,215	1,424,601	1,603,412	
Average cost per train-mile: goods and passenger miles assumed to cost the same	1.48	1.57	1.54	

Report by the Superintendent of Way and Works.

Mr. A. C. Clear, Superintendent of Way and Works, reported as follows:—

Construction.

WOOSUNG FORTS.—A passenger Jetty with 40'-0" frontage has been erected at the South West end of the concrete sea wall to enable passengers from ocean going steamers to proceed to Shanghai by train. This was a much needed accommodation, being especially useful to naval men. A 10'-0" depth of water is obtainable at lowest spring tides, and the site being carefully chosen in consultation with the Harbour Master safe landing is possible for passengers from launches or tenders of considerable size under almost any weather conditions.

GOODS SHEDS.—Upon the opening of the Tientsin-Pukow Railway, goods traffic developed so rapidly that urgent steps had to be taken to provide additional goods shed accommodation. It is not of the permanent nature that could be desired nor can it be considered adequate even for present needs. Owing to shortage of funds the following only could be given:—

SHANGHAI.—Present goods shed extended to the fullest extent the site permitted 170'-0" x 45'-0" over awning.

MARKHAM ROAD.—New goods shed 500'-0" long by 55'-0" wide over awnings.

NANKING.—New goods shed 200'-0" long by 45'-0" over awning.

NANKING WHARF.—The provision of a small goods shed and sidings at the riverside proved of such utility that immediate extension was essential. To obtain the maximum accommodation at the minimum of time and expense, a scheme for a dock 1,100 feet long by 200 feet top width by 30 feet deep was proposed and is now being carried out. By this scheme instead of "end on" loading, with its well known limitation and difficulties, only 200 feet of the river frontage is taken up by the opening to the dock, and "side on" loading will be possible from a water frontage in the dock of 2,200 feet, giving a loading capacity of over 150, 30 ton wagons from 3 lines simultaneously, all practically within (at any level of the river) 100 feet from boat to wagon, this being the maximum load a coolie will carry without additional payment. The necessity of extensive accommodation here had long been foreseen, but partly owing to lack of funds, sanction was not accorded until it was imperative. It is to be hoped that the excellent prospects of considerable traffic here will not have been jeopardised by the delay in putting this work into hand or the inconvenience under which the present traffic is being worked.

Extensive filling is very necessary here and at the Nanking terminus station.



A. W. U. POPE, C.I.E.
General Manager

MR. CHUNG MUN-YEW
Managing Director

NEW BRIDGE.—In consequence of inadequate water opening at Mile 146½ floods were of annual occurrence and considerable damage was done to the surrounding country. A new 20 feet bridge has therefore been built through the bank, which is 26 feet high at this place. Special arrangements were made to carry this work out with the least possible interference with the Traffic working. It is satisfactory to record that no stoppage or delay of any kind occurred, the work being completed in a little over one month.

Revenue Works

WOOSUNG CREEK.—A temporary footway has been attached to the existing bridge over the Woosung Creek until the public road bridge is repaired.

WOOSUNG LOCOMOTIVE WORKS.—One new 15-ton spring testing machine has been put down. The roofing and ventilation of the shops is far from satisfactory; this is being attended to as funds permit. Reinforced concrete lifting blocks have been put in for carriage work.

WOOSUNG WHARF.—One of the two seed cleaning machines has been installed in the godown, the other is under erection. Both will be belt driven by electric motors. These have been provided as an incentive to traders, particularly for sessamun seed traffic. From quarterly soundings taken along the bunding no appreciable change has occurred either from scour or silt. The cutting away of Pheasant Point opposite is rendering our property safer and easier of approach by diverting the force of the tide away from our bank of the river. The facilities provided at Woosung for the shipment of cargo are gradually being realised, and there is every possibility of this wharf developing into a most valuable and useful property. The proposal to develop Pukow as a port and its possible effect on this Railway is receiving the closest attention. Woosung is capable of being developed without any very great expenditure to meet the joint needs of the Tientsin-Pukow Railway, and this Railway as a Port for some years to come. The provision of a suitable wagon ferry from Pukow to Nanking is a factor of the first importance. Schemes are under preparation to provide this accommodation at a minimum cost.

SHANGHAI.—New office provided at Power house for electrical engineer and staff. Cattle dock lowered and generally improved. An improved type of sand furnace erected in the Running Shed. New Pig Shelter erected for the reception of this rather extensive traffic.

A simple system of signals for the protection of the Main Line interlocked with handworked points has been devised and works satisfactorily.

MARKHAM ROAD.—A temporary matched godown has been erected to give more storage accommodation. This is a very unsatisfactory method of meeting an urgent need, but, unfortunately funds will permit of nothing more substantial at present.

NANSIANG.—An experimental system of signalling has been put down for working the straight line both ways. By eliminating as far as possible the use of loops, considerable wear and tear would be saved on permanent-way and rolling-stock.

KUNSHAN.—In consequence of the rotting of the timber footbridge a new one has been erected from old steel joints.

SOOCHOW.—This engine shed roof required renewing, and as such an extensive shed was not required the size was considerably reduced, decreasing future maintenance charges and providing glass roofing for Changchow shed.

WUSHI.—The whole of the goods yard has been revised now that the special arrangements made originally for dealing with tribute rice are no longer required. The sidings have been taken close down to the river front and godowns removed and rebuilt in more convenient positions. This was a much needed improvement and enables cargo to be very quickly handled, the carrying load being reduced by over 75 per cent. Shunting operations are also facilitated by the general improvement in the layout of the yard.

A new shelter for pigs has also been provided and the river frontage straightened and stone pitched throughout.

CHANGCHOW.—The engine shed has been reroofed, economy being effected by utilizing the Mellows glazing from the Soochow shed. A new approach road with timber road bridge spanning the creek has been made at the Western end of the station connecting with the new public road leading to the city.

LUCHENG.—The station building was accidentally destroyed by fire and has been rebuilt.

TANYANG.—A new goods loading platform 70 feet long has been provided.

CHINKIANG.—The station master's house forming an obstruction to a clear view of the goods yards was set back to the boundary, at the same time the sidings were straightened out and a dangerous gradient improved. The timber platform walls were in a dangerous condition through rot and have been entirely replaced by reinforced concrete blocks of special design. These concrete blocks are of

Z section cast separately, and can be put into position without disturbance of traffic. No foundations are required as the lower portion of the Z gives sufficient bearing surface, the weight of filling on this lower portion being sufficient for stability. The upper portion of the Z projects sufficiently far to provide a refuge between the face of the platform wall and the nearest rail, should anyone fall or be pushed off the platform whilst a train is entering the station. The cost is one-third of the existing standard brick platform walls. The maintenance charges being practically nil.

The old timber footbridge was also affected by rot and is being replaced by one with reinforced concrete approaches.

Ash pit timbers were continually being burnt and are now generally being replaced by concrete blocks.

CHINKIANG BUND.—The Jetty has been temporarily repaired and at the same time widened after being partially destroyed by a typhoon. With the opening of the Tientsin-Pukow Railway the traffic at this place may be considerably reduced so that it would not be advisable to contemplate any very extensive work here for the present.

SIASHU AND YAOHWAMEN.—These stations have been signalled as crossing places.

NANKING.—The Shiakwan bridge has been rebuilt, the opening span taken out and the road surface levelled on the old piles. A permanent bridge will soon be required here to avoid heavy annual maintenance charges.

BRIDGES.—Three arch bridges Nos. 72, 73 and 104 have been converted into girder bridges owing to the settlement of approaches bringing the sleepers down on to the crown of the arch, crushing the brickwork and giving a bad jar to traffic when passing over. This was a more economical method than lifting the line and making up banks. The saving in ballast alone being considerable.

BRIDGE NO. 44.—The piers of this bridge have been rebuilt in concrete as the brickwork failed.

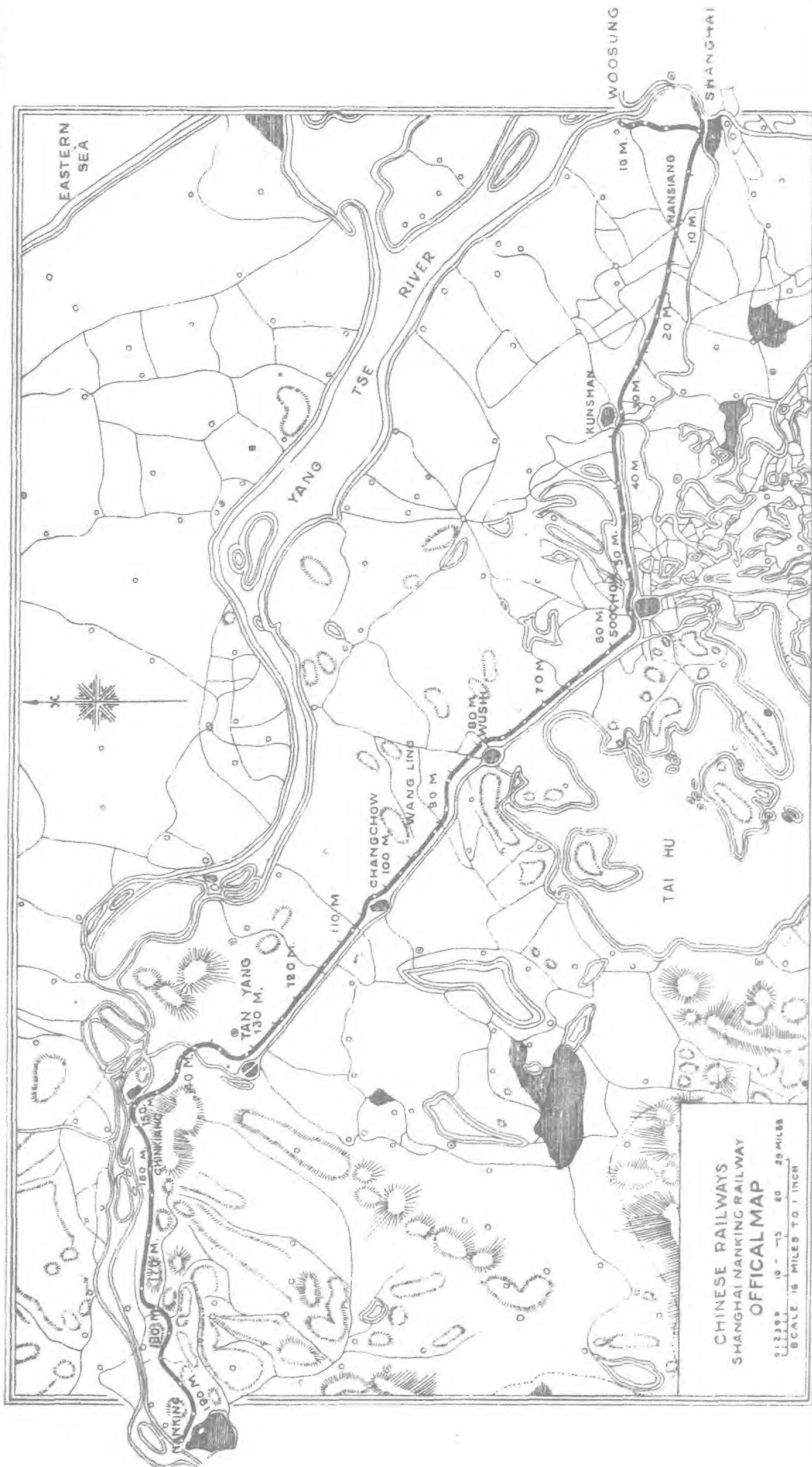
KAOTZE BRIDGE.—Owing to settlement of approaches this bridge of 40 feet span was on a sharp change of gradient, and to avoid the heavy expenditure that would have been necessary in making up formation and lifting on ballast (head room permitting) the girders were lowered 13 inches. No stoppage or delay occasioned to traffic.

BRIDGE PAINTING.—5 Major bridges have been repainted. 78 Minor bridges repainted. 35 Minor bridges covered with Bitumen Solution. Comparisons are being made between the Bitumen Solution and paint, the former being much cheaper if it has the same preservative qualities and length of service of paint.

PERMANENT-WAY.—The loops at Waikwatang and Hushukwan have been removed, not being necessary for traffic working. Crossings have been renewed at Henglin Eastern points, Wangting Eastern and Western points, and Wusih Eastern points No. 5. No. 4 sets 1 in 10 crossings have been especially strengthened and put in experimentally.

The triangle at Wusih has been entirely relaid to easier curves and a 30% saving of material effected thereby.

Owing to several broken rails a special detailed inspection of all permanent-way was carried out and all faulty rails noted or replaced in the line. One of the disadvantages from a constructional point of view of opening up a railway to heavy traffic before the earthwork is properly consolidated, that of ballasting on new banks, has shown up on this railway. Ballast on new banks is pressed into the formation and forms a channel or ditch underneath the line, this collects and retains water, is a fruitful source of slips, wastes a large percentage of ballast and gives an unsatisfactory roadbed needing constant attention. In order to remedy this, efficient drainage has been given to the ballast on all big banks by inserting bamboo tubes about 12 feet long 5 to 6 inches diameter,



at frequent intervals to the lowest point of ballast under the line out on to the slope of bank. Satisfactory results are noted and the cost is insignificant.

RAIL CREEP.—The system of prevention of rail creep by anchoring the rail in the centre and letting the ends have comparatively free play by lubricating fishplates has been carried out over 50 miles of line and is satisfactory in preventing further movement. The cost is much cheaper than any other system known to the writer.

JAPANESE SLEEPERS.—599 Japanese sleepers have been replaced by Jarrah on the Woosung line.

Electrical Department

TRAIN LIGHTING.—Three 3rd Class coaches were converted for use as power cars for supplying electric light to coolie coaches.

Fourteen coolie coaches were wired and fitted for attachment to the power cars.

Two 3rd Class coaches were converted into 1st Class Sleeping cars, the wiring and lighting being altered to suit.

Extension from Shanghai Power House.

SHANGHAI GOODS SHED.—Electric lighting has been installed in the new extension of this shed.

LIKIN OFFICE.—Electrically lighted.

MARKHAM ROAD.—A main was run out to Markham Road and electrical lighting supplied to the dock and godowns and also to the Station Inspector's quarters here.

SHANGHAI YARD.—All wooden arc light poles have been replaced with either light steel lattice posts or specially adapted tubular steel telegraph posts, necessitated by the timber posts rotting at ground line. The railway Hospital X Ray coil was burnt out and sent to the Power House for repair. This was a very delicate and tedious operation necessitating the highest mechanical skill, and that it was carried out successfully speaks well for the capabilities of this Department. Usually these coils have to be sent to Europe for repair, and this is the first occasion that an attempt has been made to carry out such highly skilled work in China.

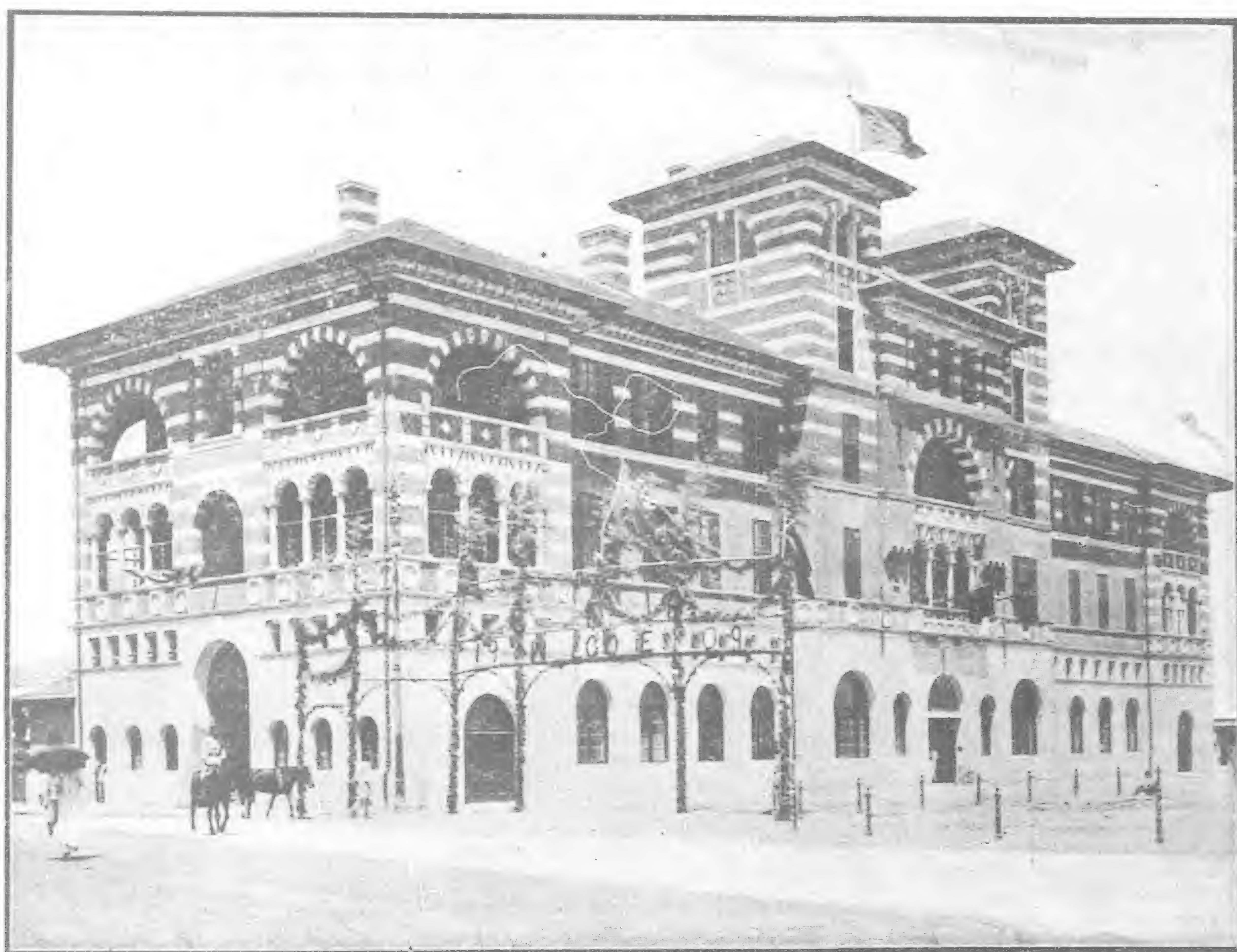
19th February 1912 are the two events chiefly responsible for the large increase in passenger earnings for 1912.

The total coaching receipts and the number of tickets sold amounted to \$2,250,260 and 4,882,173 respectively, as compared with \$1,944,134 and 4,672,335 for the previous year.

The International Recreation Club's new Race course at Kiangwan has proved a great attraction to Chinese and Foreigners, and several successful meetings were held during the year.

The stretch of water at Henli, 30 miles from Shanghai, for sailing and boating is growing more popular year by year and the expenditure of a small sum in pleasure boats and rest-houses is only needed to convert this place into a fashionable week-end resort for Shanghai residents during the Spring and Autumn.

On the 1st January 1912, Dr. Sun Yat-sen travelled by special train from Shanghai to Nanking to assume the first Provisional Presidency of the Chinese Republic.



The Shanghai-Nanking Railway Station at Shanghai

Three 1st Class coaches for the Tientsin-Pukow Railway were fitted with electric light and bells complete.

The maintenance of train light apparatus generally has received careful attention and is in good condition.

Plant and Installation Work

WOOSUNG.—The Nederland Harbour Works workshop was connected up to our mains for the supply of electrical current.

Every effort is being made to attract private consumers, to reduce as much as possible the heavy power charges with which our workshops are saddled in consequence of the high capacity of the engines installed. Seldom is more than a third their capacity needed, the result being high power charges.

GENERAL MANAGER'S HOUSE.—The General Manager's house was wired complete for electric lighting consequent upon the practical rebuilding and enlargement of this house for the General Manager.

The following works are at present in hand:—

SHANGHAI TO SOOCHOW.—Erecting an additional line from Shanghai to Soochow for the installation of electrical train staff working.

WOOSUNG.—Running mains from Power House to Goods shed and erecting motors for the seed cleaning machines.

WUSIH.—Installing electric light to Wusih station, supply being taken from town mains.

TELEGRAPH AND TELEPHONE LINES.—All poles to the above have been opened out at ground line well tarred and banked up again as a preservative measure.

Report by the Traffic Manager

Mr. J. D. Read, for the Traffic Manager, reported as follows:—

COACHING.—The opening of the Tientsin-Pukow Railway to regular traffic, and the selection of Nanking as the temporary Capital of the Chinese Republic from the 1st January to the

GOODS.—The opening of the Tientsin-Pukow Railway, the reorganization of the Likin administration whereby the taxes on rail borne traffic were made the same as by water, and the anxiety of farmers and merchants to send their goods to Shanghai as soon as the country became fairly settled after the Revolution, have created a far larger goods traffic since October than we are able to satisfactorily cope with. The fact that weighs most with merchants in giving the Shanghai-Nanking Railway the traffic in the face of the competition is that the Railway assumes the position of legal Bailee in reference thereto.

Owing to the paucity of cars we have to unload and return, loaded or empty, all cars in 5 to 6 hours, a practice which though it increases the earnings will ruin the stock, which is overworked.

In spite of every effort made to carry the traffic offering, hundreds of tons of beans have been spoiled at Nanking and Pukow owing to our inability to provide sufficient wagons. This

coupled with the fact that two or three steamers made additional trips to Nanking during the latter part of the year, gives some idea of the volume of traffic already coming down the Tientsin-Pukow Railway.

On the 15th January 1912 two Goods Compravadores were appointed and they, together with the Traffic Canvassers, have done excellent work during the year in encouraging merchants to send their goods by rail and advertising our rates and regulations—in fact we owe the present spurt very greatly to them.

On the 6th April 1912 arrangements were made with the Chinese Customs for the transport by rail of certain Native Exports under Transit Passes from the Treaty Ports of Nanking and Chinkiang to Shanghai. This concession as far as this traffic is concerned has put us on the same footing as the river steamers, and has resulted in a rapidly increasing traffic in Sesamum Seeds for export to foreign countries.

The total quantity of goods carried was Piculs 8,205,853 as compared with Piculs 5,268,144 in 1911; the earnings being \$387,759 or over 60% more than the previous year. These figures are satisfactory when it is borne in mind that the transport of Tribute Rice has ceased with the change of Government.

Arrangements were entered into with a Lighter Company at the end of the year for

lightening goods to and from our Woosung Wharf and this has resulted in an increasing export traffic to foreign countries which we trust will soon be sufficiently large to warrant ocean steamers calling there.

The Cocoon Season was an exceptionally good one, no fewer than 149,383 bales having been carried.

RATES & FARES.—No alterations have been made in the Coaching fares during the year 1912, and on the Woosung Branch Line the fares which were inaugurated in 1910 still continue to be greatly appreciated.

The Goods rates remain practically the same as in the previous year and only in a very few instances has it been considered necessary to make any alterations to compete with the water routes.

ACCIDENTS.—During the year there were no accidents to the travelling public, but I regret to report that the number of trespassers killed and injured has increased very considerably. This is due in a great measure to the running of night trains, for so long as the Railway is used as a public highway, the increase in the train service is almost certain to be attended by additional loss of life.

Particulars of all accidents are given in the table below:—

	By accidents to trains rolling-stock permanent-way, &c.		By accidents from other causes in- cluding accidents from their own want of caution, or misconduct		By accidents whilst passing over Rail- way at level cross- ings		Trespassers		Miscellaneous, not included in preced- ing columns		TOTAL	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Passengers	—	—	5	21	—	21	—	—	—	—	5	21
Servants	1	1	1	2	—	2	—	—	—	—	2	3
Other Persons	—	—	—	—	—	—	63	25	—	—	63	25
Animals	—	—	—	—	—	—	—	—	4	2	4	2
Totals in all classes	1	1	6	23	—	23	63	25	4	2	74	51

The total number of people killed was 70, but no passengers or servants were killed from causes beyond their own control.

The particulars of the only serious accident are as follow:—

At 7.25 p.m. on the 31st October 1912, train No. 16 Down collided with a Permanent-way trolley outside Soochow Station. The coolie in charge of the trolley was killed, but the three other coolies escaped unhurt.

The cause of the accident was due to the carelessness of the coolie in charge who took the trolley out without permission contrary to all rules and regulations.

COMPLAINTS.—The only complaints received during the past year have been due to the shortage of rolling-stock, both Coaching and Goods.

STATIONS.—The only stations opened during the year were Woosung and Nanking Wharves.

Woosung River-side Wharf, originally opened in 1911 for the transport of Tribute Rice, was re-opened in July. From October to the end of December 1912, we handled over 5,000 tons of traffic at this station. When the value of placing goods for export and import under Bond here is realized and merchants thus save all the expense and trouble in connection with the 8 miles of river between Woosung and Shanghai, much work will be done at this Wharf.

Nanking Wharf was opened in May 1912 to facilitate the transport of traffic between the Shanghai-Nanking and the Tientsin-Pukow Railways.

TRAIN SERVICE.—With the exception of the night trains and the extra Goods trains, the train service remained practically the same as in 1911—the Summer Time Table taking effect

from the 20th April and Winter Time Table commencing on the 1st December 1912.

On the 24th February 1912, a Night Train Service between Shanghai and Nanking was inaugurated and has proved a marked success. The twenty-two 1st class sleeping berths provided on each train have been so well patronized that it has been decided to double this number in the near future.

On the 9th May 1912, the Express Local train running between Soochow and Shanghai was cancelled.

In order to meet the heavy Cocoon traffic during the Summer, extra Goods trains were run between Shanghai and Wusih from the 1st June until the end of September 1912.

From the 10th August 1912, extra Goods trains were also arranged to run as required from Shanghai to Nanking, and vice versa, to meet the increasing Goods traffic.

A Market Gardeners' train was run in the early morning during the season, from the 28th May to the 9th November from Nansiang to Shanghai; it had to be taken off because we could not spare the cars.

STAFF.—Mr. P. L. Gaussen, Assistant to the Traffic Superintendent, was granted six months' furlough on and from the 8th July 1912.

CLAIM.—The claims during the year amounted to \$3,126—of this sum only \$706 were paid for Goods damaged or lost, which speaks well for the excellent work performed by the Goods Staff including the Goods Compravadores.

The numerous robber bands are taking advantage of the unsettled conditions prevailing pending the establishment of a permanent form of Government and are responsible for over one-third of the total claims paid during 1912.

MISCELLANEOUS.—Too much stress cannot be laid on the urgent need for a ferry at Nanking, increased terminal facilities at the Goods Depots, and more rolling-stock, as the Goods traffic needs careful fostering if the Railway is to compete with the River steamers and creek native boats traffic.

The staff, one and all, have by their untiring efforts secured more traffic than we are at present able to cope with through the shortage of rolling-stock generally.

Report by the Chief Medical Officer

Dr. J. P. Ziervogel, Chief Medical Officer, reports as follows:—

The general health on the Railway has not been very good during the past year. This is attributable to the exceptionally hot summer, the epidemic of typhoid in Shanghai in the Spring and general unhealthy condition which prevailed during the months of July, August and September.

At the suggestion of the General Manager a Sanitary Committee was formed in February consisting of the Superintendent of Way and Works, the Locomotive Superintendent and the Chief Medical Officer, Sanitary rules were drawn up, and two Indian sanitary inspectors were appointed.

Special precautions were also adopted for Sanitary measures during the summer months. Amongst these may be mentioned means for sterilizing face towels served out to Chinese passengers on the trains and the distribution to all stations of barrels and measures for mixing disinfectant fluids, with rules for its use.

During July and August there was a great deal of cholera all over the country round the Railway, but only six cases occurred among the staff. There was, however, a great deal of dysentery and diarrhoea.

In November all the permanent-way coolies were examined medically, and those with organic disease or physical defects were weeded out. Since then coolies are examined before they are employed.

The number of accidents attended with injury to persons or loss of life during the year was 125. The majority of these were trespassers. The number of accidents to employees is surprisingly small.

The following are the number of cases treated on the various sections:—

	Number treated at dispensary or visited	Number admitted to the Hospital
Shanghai	1721	122
Soochow	148	36
Chinkiang	986	77

(Continued on next page)

THE PEKING SYNDICATE

The Paris correspondent of the *Financial News* learns that the Peking Syndicate has personally subscribed Frs. 5,000,000, and the promoting syndicate another Frs. 5,000,000 towards the capital of the Industrial Bank of China. The balance of Frs. 20,000,000, or 40,000 shares, has been underwritten by a syndicate, and will shortly be offered in subscription preferentially to existing shareholders of the Peking Syndicate. In any case, any holder of 50 Shansi shares, or 50 Peking ordinary, or one Peking deferred, will be entitled to one share at par of the Industrial Bank of China, the board of directors of which will reside in Paris, with a general committee of direction in Peking.

STATEMENT OF ROLLING-STOCK for the year ending 31st December, 1912.

Description					REPAIRS AND RENEWALS								
LOCOMOTIVES					Total stock at end of previous year	Additions during the year	Reductions during the year	Total stock at end of the year	Actual stock in running order on the last day of the year	Number repaired during the year	Number undergoing or awaiting repairs on the last day of the year	Average number under-going repairs or re-newals at any one time	Stock condemned in this and previous year awaiting replacement
Tender or tank	CLASS	Distribution of wheels	Hauling power on the level in tons	Gross weight of engine and tender in tons									
Tank	<u>A. 18</u> 6×57	4-6-2	1,100	74.35	2			2	1	8	1	.5	
Tender	<u>B. 18</u> 6×57	4-C-0	1,100	102.35	10			10	8	27	2	.7	
Do.	<u>C. 18</u> 4×79	4-4-0	917	98.45	12			12	10	41	2	1.8	
Do.	<u>D. 18</u> 2×84	4-2-2	846	97. 8	4			4	3	23	1	.4	
Tank	<u>Bagnall 15</u> 6×43	C-C-0	705	32.50	2			2	2	2			
Do.	<u>Am. Passr. 13.5</u> 4×62	2-4-2	780	50.30	1			1	1	2			
Trav. cranes	8 ton	.....	.....	.....	1			1	1				
Do.	5 "	.....	.....	.....	1			1	1				
TOTAL					33			33	27	103	6		

Description														
COACHING VEHICLES				Length of underframes in feet	Tare	Carrying capacity (passenger)								
							T. Cwt.							
Saloon cars	}	52	37.16	8	1		1	1	5				1	
		68	43.16	16	1		1	1	4				—	
*Officers' saloons.		32	21.16	4	2		2	2					.2	
	}	42	29.16	6	2		2	2	4				1	
		55	30. 8	12	2		2	2	4				.1	
First class corridor kitchen cars		68	41. 8	64	1		1	1	13				.3	
Do. do. do. (with coupés)		68	41.18	46	5		5	5						
First and second class dinner composite cars		68	39.18	60	4	3	1	1	9				.3	
First class sleeping cars		68	36. 8	22	—	2	2	2	6					
First and second class composite cars		68	39.18	72	3	3	6	6	10				.3	
Do. do. (with longitudinal seats)		55	27. 8	70	3		3	3	10				.3	
First, second, third and brake composite cars		55	25.16	90	1		1	1	1				—	
Second class lavatory cars		68	39 18	72	2		2	1	1	1			.1	
Third class lavatory cars	}	68	36. 4	100	19	2	17	16	33	1			.1	
		55	26. 8	56	4		4	4	5					
		36½	17. 8	52	2		2	2						
Do. do. (with longitudinal seats)		68	37.12	130	11		11	11						
Do. do. (with guard's compartment)		68	37.12	120	3		3	3						
Do. cars (without lavatory)		36½	17.10	56	2		2	2						
Do. brake and luggage composite vans		68	36. 8	60	4	1	3	3	7				.1	
Do. do. and large luggage van		68	36. 2	40	2		2	2						
Do. do. mail composite vans		68	37. 2	40	3		3	3	8				.1	
Do. do. luggags vans		55	26. 2	40	2		2	2	1					
Luggage and treasure vans		68	35.18	—	1		1	1						
Brake, mail and luggage vans		68	35.18	—	—	1	1	—		1				

Brake and mail vans.	36 $\frac{1}{2}$	17.2	—	2	2	2	2			
Covered goods, bogie, steel.	38	16.19	30	40	2	38	38	41		1.8
Do. do. (fitted for poultry)	38	17.0	30	—	2	2	2			
Do. bogie, steel sides, wooden tops and roofs	38	17.0	30	50		50	49	35	1	1.3
Do. bogie, steel sides, wooden tops and corr. iron roofs	38	15.8	30	21		21	21	34		.7
Do. four wheeled, steel	22 $\frac{1}{2}$	9.14	21	16	3	13	13	5		.1
Do. do. (fitted for fish)	22 $\frac{1}{2}$	9.14	21	—	3	3	3			
Do. do. (fitted for ice)	22 $\frac{1}{2}$	10.0	21	4		4	4			
Do. do.	18	9.11	15	—	2	2	2			
Do. do. steel sides, wooden tops and roofs	18	9.10	15	4		4	3	1	1	—
Medium sided wagons, bogie, steel	38	14.5	35	42		42	39	83	3	5.2
(a) Do. do. (fitted for coolie class)	38	15.8	—	14		14	14	9		.2
Small sided wagons, four wheeled, steel	18	8.8	18	44	11	33	33	46		1.2
(b) Do. do. (fitted for coolie class)	18	9.12	—	—	3	1	2	1	1	—
Do. do. (for sewagetanks)	16	8.8	18	1		1	1			
Cattle wagons, bogie, steel, sides, wooden uppers	38	15.8	30	17		17	17	30		.9
Do. 4 wheeled, steel sides, wooden uppers	18	9.0	15	1		1	1			
Pig wagons, 4 wheeled, steel	18	9.15	15	—	2	2	2			
Horse boxes, steel	38	19.12	6	2		2	2			
Market wagons, 4 wheeled steel	18	9.8	15	—	6	2	4	1	12	.7
Flat wagons, bogie, steel	38	10.5	35	5		5	5	4		.1
Do. wooden	22	8.0	20	2	2	—				
Kerosene tank wagons	38	16.18	30	1		1	1			
Oil tanks, cylindrical	36	14.0	30	2		2	2	5		.2
Brake vans, bogie, steel.	38	19.12	15	10		10	9	11	1	.4
Brakedown van	32	8.0	20	—	1	1	1			
Flat breakdown wagon	32	8.0	20	—	1	1	1			
Breakdown van, 4 wheeled	18	9.10	15	—	1	1	1			
Total				358	27	27	358	345	438	13

* One 55 ft. Officers, saloon car available for ambulance purposes.

(a) Converted into Coolie class and used entirely for passenger traffic (60 passengers)

(b) " " " (32 ")

c 13 with corrugated iron roofs.

A 5,500 TON MOTOR SHIP

The twin screw motor ship *Siam*, under the command of Captain C. Jensen, arrived at Shanghai recently on her maiden voyage to the Far East.

The vessel, which is a four-masted ship of 5,500 tons gross, 2,489 net tonnage and is capable of carrying about 10,000 tons dead weight, is 410 feet in length, 55 feet beam and when deep laden has a draft of 28 feet. She is owned by the Danish East Asiatic Co., of Copenhagen, and is the largest vessel of her type which has yet visited the Far East. She was built by Messrs. Burmeister and Wains of Copenhagen, and is the first of four new ones being built for the company, the other vessels being the *Malakka*, *Annam*, and *Tongking*, and they, along with the *Siam*, will all be engaged in the Far Eastern trade.

The *Siam* is a splendid sea boat and is easily handled in the roughest sea, and in addition is far more economical to run than an ordinary steamer. On the voyage out from Antwerp she maintained an average speed of 11.8 knots per hour on a daily oil consumption of between ten and twelve tons of oil. Her full oil fuel capacity is 1,254 tons in her regular oil bunkers, while in addition she also carries 1,145 tons in the ballast tanks, so that she could come out from home, return and then make another round voyage without replenishing her oil supply.

The exhaust from the engines is by means of pipes which are fitted on each side of the mizzen mast, the outlet being well above the deck so that all offensive oil odours are avoided.

The engine room is full of the powerful machinery which propels the vessel, consisting of Diesel motors of the four stroke cycle type,

with eight cylinders, while she also has motors of the two stroke cycle type for the main engines. There are banks of eight of the cylinders on each side of the engine room. The motors develop 3,000 indicated horse power, and the auxilliary engines develop 200 indicated horse power each. The engine room, owing to the total absence of coal and ashes, is a model of neatness and cleanliness, the machinery being painted a dazzling white and the exposed metal parts gleaming like silver. For the use of the engines the oil fuel is daily pumped from the bunkers to large upright tanks at one end of the engine room level with the main deck, and from these tanks the fuel is distributed by means of small pipes to where it is needed, and, in the course of reaching its destined place in the liquid fuel pumps and cylinders is cooled by means of sea water. The machinery is kept lubricated by pumps on the interior lubricating system. The oil lubricant passes through the cylinders, piston rods, cross heads, journals and guides and thence back to the tanks, where it is again used as fuel. The auxiliary engines work all the electric dynamos, and supply all the current used in the ship, no matter for what purpose, being passed through a transformer developing 220 volts, while the electric lights are only 110 volts. This current also supplies the power to the derricks and winches, etc. There is also an air compressor of twenty atmospheres which is used in starting the engines. The starting and reversing gears are all controlled by means of levers. When the vessel is going full speed ahead on 122 revolutions per minute, and it becomes necessary to reverse the engines, this is done by a set of steel arms which clutch part of the machinery and so prevent breakage. When the ship is ready to go ahead, her going astern machinery must also be ready for action or else there would be an accident. In another

part of the engine room there is a boiler used for condensing salt water and turning it to fresh. This also supplies the heat to the radiators in the various rooms, saloon, etc.

INTERNATIONAL RUBBER EXHIBITION AT BATAVIA

An International Rubber Congress and Exhibition is to be held at Batavia, Java, in September, 1914. The Congress will be held from September 7th to 12th, for the purpose of studying the scientific, economical, technical and commercial questions that concern rubber culture and the industry. The Congress will be divided into eight sections, namely:—

1. Botany and Zoology.
2. Climate and Soil.
3. Culture and Crop.
4. Preparation, etc.
5. Working policy, etc.
6. Synthetic Rubber
7. Commerce, and
8. Publications.

The Secretary of the Committee, Dr. C. J. J. Van Hall, Buitenzorg (Java), will supply any information desired concerning the Congress.

The Exhibition will be held from September 8th to October 10th, 1914. Its object is to show how the culture and preparation of rubber is conducted in the principal producing countries. An exhibition of manufactured rubber goods will also be held. Applications for space must be made to the Secretary General, before November 1st, 1913.

The Exhibition is under the patronage of H.R.H. the Prince Consort of the Netherlands.

FAR EASTERN RAILWAYS

CHINA

Shantung Railway Company.—The report of the Shantung Railway Company shows that, in spite of the considerable decrease in the building materials for the Tientsin-Pukow Railway that were carried, the traffic shows a satisfactory increase. The receipts rose to \$4,240,000, from \$3,510,000 in the previous year, against an expenditure of \$1,180,000 (\$1,100,000). The account in marks shows that revenue and interest total Mks. 8,990,000 (against Mks. 6,590,000), and expenses Mks. 2,460,000 (Mks. 2,040,000). After various appropriations there is a net profit of Mks. 5,596,297 (against Mks. 4,333,458). The reserves receive Mks. 529,297 (Mks. 415,086), the Government Mks. 116,235 (Mks. 51,789), and Board of Directors Mks. 103,118. The dividend of 7½ per cent. (6 per cent.) absorbs Mks. 4,050,000 (Mks. 3,240,000), and the profit-sharing certificates Mks. 670,000 (Mks. 270,000), or Mks. 12.50 (Mks. 5) each. There remains a balance of Mks. 122,793 (against Mks. 304,791) to be carried forward.

Pukow-Sinyangchow Railway.—The *Asiatic Daily News* has the following about this line: It is reported that a Draft Agreement has been drawn up and that as soon as it is sanctioned by the Ministries of Finance and Communications and passed by the National Assembly, a proper Agreement for the Loan will be signed by the parties concerned. The following are some of the important terms of the Draft Agreement:—

(1) *Use of the proceeds.* The proceeds of the Loan shall be used as capital for the construction of the Railway line from Pukow to Sinyangchow.

(2) *Amount of the Loan.* £3,000,000.

(3) *Discount,* 5½ per cent.

(4) *Banking Commission,* 2½ per mille.

(5) *Interest.* 5 per cent. per annum, to be payable half-yearly.

(6) *Time of payment of the Loan.* The Bonds of the Loan shall be issued and sold within six months after the signing of the Agreement. If funds are required before the sale of the Loan Bonds, the borrower may ask the Syndicate to make advances, but the amount of such advances shall not exceed £200,000.

(7) *Time of repayment.* The repayment of the principal of the Loan shall commence from the 11th year, and the Loan is to be repaid in 30 years. If the borrower desires to repay the loan fully before the stipulated time, he may do so by paying an additional sum of 2½ per cent.

Canton-Hankow Railway.—The railway from Hankow to Canton and Szechuan will be under the direct control of the Ministry of Communications. Vice-Minister Feng Yuan-ting has been ordered to proceed at once to Hankow to take charge of it for the government. Chen Tien-yao (Jeme Tien-yow) will remain managing director and will act at the same time as expert of the Ministry.

Railway Progress Round Canton.—Considerable progress is reported in the surveying of the line northwards from Shiuchow via Pingshek, and over the mountains in the Hunan province. This line from Canton is now open as far as Yingtak, though, as usual, the station is some distance from the city and the other side of the river. At this point there is some difficulty in regard to bridging a rather wide river; but when this is finished, another piece of line will be opened of considerable length, for the navvies have been laying down rails all the time, so that when the difficulty of the river is conquered, the line to the north of it, as far as Shiuchow will almost be ready for the engine.

Then from Shiuchow to Pingshek surveyors have been at work, and the line of the track has been decided upon, though there does not appear to be a great deal of eagerness to get this part done until the people of Hunan are farther advanced with their end of the work, for there cannot be much traffic between this town and Shiuchow. The country is mountainous, the people are scattered; and local trade is not extensive. The main point is, however, that there are hopes that Shiuchow will be open to the outside world by rail by the end of this year.

The Cantonese are further clamouring for permission to build a branch line from Sheklung, on the Kowloon-Canton line, to Tsang-shing on the East River. This is a populous town, and the line would pass through a rich district, though at present a very disturbed one. Anyway, if there is a railway running directly into the midst of the district, it will improve matters. The distance is not great, something less than twenty miles, and the country is as level as a billiard table.

Yunnan Railways.—A correspondent writing to the *Shanghai Mercury* under date May 26 says:—There is some stir in railway matters again and Mr. Dawley, the American engineer-in-chief, has been re-engaged for a further term of two years. The main question again appears to be funds. On paper there is ample money to build the short road to Kochiu from Mengtze, but the parties in charge of the money have reinvested it so that of actual cash there is less than the public thinks there ought to be, so we are in a turmoil of mutual recrimination. Sundry inconvenient posters are out, asking pertinent (or impertinent whichever way you choose to take it) questions along this line and as criticism is the last thing a Chinese desires, there is much uneasiness and threats of resignation, etc.,—meanwhile no railroad work goes on.

SHANGHAI-NANKING RAILWAY

The following figures of traffic returns (approximately) for the week ended May 17 are issued by the Shanghai-Nanking Railway:—

For the week.			
Year.	Passengers.	Goods and Sundries.	Total for the week.
1913....	\$ 48,356	\$ 9,456	\$ 57,812
1912....	45,604	7,232	52,836
Increase.	2,752	2,224	4,976
Decrease	—	—	—

For nineteen weeks.			
Year.	Passengers.	Goods and Sundries.	Total
1913....	\$ 966,950	\$ 191,080	\$ 1,158,030
1912....	961,062	106,011	1,067,073
Increase.	5,888	85,069	90,957
Decrease	—	—	—

Week ended May 24:—			
For the week.			
Year.	Passengers.	Goods and Sundries.	Total for the week.
1913....	\$ 45,195	\$ 9,615	\$ 54,810
1912....	45,483	7,955	53,438
Increase.	—	1,660	1,372
Decrease	288	—	—

For twenty weeks.			
Year.	Passengers.	Goods and Sundries.	Total
1913....	\$ 1,012,145	\$ 200,605	\$ 1,212,840
1912....	1,006,545	113,966	1,120,511
Increase.	5,600	86,729	92,329
Decrease	—	—	—

Week ended May 31:—

For the week.			
Year.	Passengers.	Goods and Sundries.	Total for the week.
1913....	\$ 42,037	\$ 10,306	\$ 52,343
1912....	43,660	8,638	52,298
Increase.	—	1,668	45
Decrease	623	—	—

For twenty-one weeks.			
Year.	Passengers.	Goods and Sundries.	Total.
1913....	\$ 1,054,182	\$ 211,001	\$ 1,265,183
1912....	1,050,205	122,664	1,172,869
Increase.	3,977	88,397	92,374
Decrease	—	—	—

Week ended June 7:—

For the week.			
Year.	Passengers.	Goods and Sundries.	Total for the week.
1913....	\$ 45,387	\$ 10,577	\$ 55,964
1912....	41,883	18,679	60,562
Increase.	3,504	—	—
Decrease	—	8,102	4,598

For twenty-two weeks.			
Year.	Passengers.	Goods and Sundries.	Total.
1913....	\$ 1,099,569	\$ 221,578	\$ 1,321,147
1912....	1,092,088	141,283	1,233,371
Increase.	7,481	80,295	87,776
Decrease	—	—	—

Anking-Chengyangkuan Railway.—It is reported that a Provisional Agreement has been signed between Kuan Kwang-non, Hong Mun-kuei and others with a Japanese firm for the construction of a line between Anking and Chengyangkuan, a distance of about 500 li. It was about eight months ago that the residents of Chengyangkuan began to organize a company to construct this railway. The approval of the Chamber of Commerce at Anking was first secured. Negotiations with the Japanese firm in question were opened up about six months ago. About the end of April, the Provincial Assembly sanctioned the construction of the line by the company that had been organized, and this sanction was endorsed by the Tutuh. The proposal met with opposition from Mr. Liu Woo-kong, the Industrial Director at Anking, who claimed that the line would interfere with the Pukow-Sinyang project. However, the proposal was forwarded to the Board of Communications, but so far, we understand, no reply has been received.

It is stated that about six weeks or two months ago, a preliminary contract was signed by the Chinese company and the Japanese firm alluded to. This contract is said to be substantially as follows:—

CLAUSE 1.—A and B make this preliminary loan agreement in connection with the Anking-Chengyangkuan Railway. The loan is for.....

CLAUSE 2.—The loan will be secured by the Rice Tax, and the proceeds of the tax will be mortgaged to B.

CLAUSE 3.—The preliminary advance of the loan will be at a discount of.....and carry interest of.....

CLAUSE 4.—A and B will work mutually and proceed with the work without undue delay.

CLAUSE 5.—A survey of the whole line will be first made, after which an engineering estimate of the cost will be submitted. B will recommend to A the necessary engineers and assistants, and A will make separate agreements with such engineers and assistants. If the men recommended are not suitable, A has the power to consult with B and change them. Salary and passage money are fixed in the agreement.

CLAUSE 6.—This preliminary loan is deposited in a bank agreed upon by A and B. The Adviser's approval must be given before this money can be drawn.

CLAUSE 7.—After this agreement is signed, A must engage B as Adviser for A's company and all the matters in regard to the railway company in reference to traffic and management must be decided upon after consultation with this Adviser. There must be a separate agreement with the Adviser.

CLAUSE 8.—After this agreement is signed, A must open two temporary offices, one in Shanghai and one at Anking, and also must make provision for an accountants' office at Shanghai.

CLAUSE 9.—If the sum lent is not sufficient, A can consult with B and B will make arrangements.

CLAUSE 10.—Work shall be started after the survey of the whole line is complete and the estimate supplied by B's engineer shall have been approved by A.

CLAUSE 11.—After the survey is made and the estimate is presented and approved, the second loan can be negotiated. This loan will be arranged by B for A.

CLAUSE 12.—The first loan is to be paid back to B when the second is paid over.

CLAUSE 13.—If after the whole line is surveyed, B should find that the loan would be unprofitable, B can cancel the agreement with A, who will pay back the first loan, capital and interest.

CLAUSE 14.—The second loan is payable as required for construction.

CLAUSE 15.—The second loan has a discount of and interest of per annum, payable each six months.

CLAUSE 16.—All the money is to be drawn and paid back at Shanghai.

CLAUSE 17.—The second loan is also to be deposited in a bank at Shanghai to be mutually agreed upon. When money is drawn, such withdrawal must be sanctioned by the Adviser.

CLAUSE 18.—The question of the repayment of the principal and interest is to be discussed after the estimate of the cost of construction has been obtained.

CLAUSE 19.—The whole of the machinery, materials, and buildings, and any other properties of the company, and also the profit working and the Rice Tax are the security to B.

CLAUSE 20.—All the materials required will be purchased for A by B by public tender, B receiving 5% commission.

CLAUSE 21.—For the construction of railway station, tunnels, bridges and other engineering work, the company will invite public tenders.

CLAUSE 22.—The Adviser has the right to recommend persons to be employed subject to the approval of the general manager and sub-manager.

CLAUSE 23.—The accounts of the company must be kept according to foreign method. Chinese or foreigners can be employed in the accountants' department.

CLAUSE 24.—A copy of the traffic accounts and the yearly report of the company must be sent to B.

CLAUSE 25.—The proceeds of the loan cannot be used for other than railway purposes.

CLAUSE 26.—Chinese students who have been educated in foreign countries or who have had experience in other railway companies may be employed.

CLAUSE 27.—After this agreement is signed, A cannot negotiate a similar agreement with anyone else. If before this agreement was signed, A has negotiated an agreement with anyone else, B takes no responsibility.

We are informed that the amount advanced in the first instance was nominally \$50,000, but actually \$48,000 and that the interest was about

7%. It is also stated that the bonds of the main or second loan were to be fixed at 91 and that the interest was to be 7%.

This alleged agreement, we are officially informed, has not been brought before the Chinese National Railway Corporation, to which all such instruments have to be submitted. Negotiations, we are told, are still going on.

The Yuet Han Railway.—The official opening of the extension of the Yuet Han Railway to Ying Tak took place on May 10. The party, consisting of about 14 European and 800 Chinese guests, left the Wongsha Station at 8.45 a.m., arriving at Yin Tak at 1 p.m. On arrival at Ying Tak, tiffin was served in a large matshed specially built for this purpose. Photos of the principal guests were taken before the departure from Ying Tak, and the train left on its return journey at 2.45 p.m., arriving at Wongsha at 7.50. The train was in charge of the Traffic Manager, Mr. Wong, who did his best to make the outing a success. This addition to the line ought to be of great benefit to Canton, as there is sure to be a lot of traffic up and down, especially as faster trains are being put on.

Soochow-Chiahsing Railway.—Negotiations are in progress for the turning over of the Soochow-Chiahsing Railway to the Government, and it is reported that the Government intends to appoint Chung Mun-yew as the Director of this line.

JAPAN

New Japanese State Railway Locomotives.—The State Railways of Japan for their heavy grade mountain service have adopted a new type of Mallet locomotive. The engines, twenty-four of which are at present being delivered by the American Locomotive Company, are the second most powerful locomotives that have ever been put in service on a "narrow-gauge" road, and it is expected that through the employment of these large units, the operating efficiency of the heavy grade sections can be considerably increased.

The characteristic feature of the "Mallet" locomotive is that it has two separate sets of driving wheels, each complete with its own cylinders, valve gear, etc.; in reality being nothing more or less than two locomotives under one boiler. The power of a locomotive is indirectly limited by the number of driving axles which it is possible to successfully incorporate in the design while still producing a unit which will easily pass through a Railway's existing curves. The "Mallet" locomotive, by virtue of having the driving axles divided into two separate systems, the first of which is free to turn when the locomotive passes through a curve, can have practically twice the number of axles which it is possible to put under an ordinary locomotive. The new locomotives have six driving axles as compared with four, the greatest number possessed by any of the Railway's present units of motive power.

In connection with the "Mallet" design of locomotive it is interesting to note that whereas the abstract idea as to the potential possibilities of an engine of the type, was first put forth by a Frenchman, Monsieur Mallet, many years ago, it has remained for engineers of another nationality to put the idea into practical form. In 1904 the American Locomotive Company constructed its first Mallet articulated compound locomotive for the Baltimore & Ohio Railroad; and because of the ability of this engine to successfully meet the requirements of the most exacting service, the type has been introduced as a standard on practically all of the principal American railways. In addition to contracting several hundred of these engines for American railways, the American Locomotive Company have completed, or have under construction, engines of the Mallet type for Japanese, South American, South African and French railways.

Where already in service, the saving in operating costs effected by the use of the

Mallet has amounted to as much as 50 per cent. as compared with the cost of operating the two ordinary engines which one Mallet universally replaces and it is to be expected that equally good results will be obtained in Japan. The railway engineers are to be congratulated for their foresight in adopting as a standard for the mountain sections, this type of locomotive, for through the employment of the engine it will be possible to not only reduce the operating expenses, but in addition to relieve, through the moving of heavier and longer trains, the traffic congestion which is particularly severe on the mountain divisions of the Imperial Government Railways.

New Light Railways.—The Imperial Government Railway Board has given charters to the Maruko Electric Railway Company in Nagano prefecture and to the Kawamiya Railway Company in Kagoshima prefecture for the construction of light railways. The Maruko Electric Railway will connect Maruko village in Ogata district, Nagano prefecture. The length of the Railway will be 5 miles, with a gauge of 3 feet 6 inches. The company was promoted by Mr. Kudo and six others with a capital of 250,000 yen. The Kawamiya Railway will run between Hirasu and Miyanoshiro, two villages in Satsuma district, Kagoshima prefecture. The mileage of this railway will be 19 miles and the gauge 3 feet 6 inches. The railway company was promoted by Baron S. Narahara and seventy-six others with a capital of 600,000 yen.

Railway Extension.—The new lines of railway, now under construction, will, according to Mr. Furukawa, the newly appointed Engineer-in-Chief of the Railway Board, be proceeded with as originally planned in spite of the administrative readjustments and the proposed reduction in the construction appropriations for the current year. They are expected to be completed by the end of the year and will have a total length of 240 miles, as follows:

	SECTION	MILEAGE mile.
Sendai	Kagoshima to Sendai	31.04
Miyazaki	Kobayashi to Aoidake	35.35
"	Miyazaki to Kiyooka	5.61
Sacki	Oita to Sacki	48.58
Takashima	Kawada to Ikeda	25.27
Tadotsu	Tadotsu to Kwanonji	16.50
Tsumano	Yamaguchi to Sasame	3.58
Hamada	Imaichi, Idzumo to Nima	26.55
Boso	Ohara to Katsuura	8.55
Hojo	Kisaradzu to Kadzushima	10.55
Ganetsu	Yamato to Uwage	41.30
Murayama	Shibata to Murakami	20.57
Taira	Koriyama to Ono-Shinmachi	30.34
"	Taira to Kawasaki	18.45
Shinsho	Imadeyama to Naruko	13.37
"	Shinsho to Sema	12.58
"	Shinsho to Sakata	34.40
"	Sakata branch line	1.53
Soya	Onikopu to Kawitombetsu	9.39
Shimofurano	Takikawa to Shimofurano	35.72

LIGHT RAILWAYS.

	SECTION.	MILEAGE, mile.
Wakabetsu	Rukeshibe to Shimoikutahara	18.31
Maoka	Maoka to Nanai	7.30
Kamiiso	Kamiiso to Garyokaku	5.64
Manji	Shibuni to Manji, and from Shibusui to Takinoue	7.11
Funakawa	Oiwake to Takimoto	11.77
Nagai	Akayu to Nagai	11.40
Miyachi	Kumamoto to Minomikata	12.25
Inukai	Oita to Nakamura	6.14

Receipts of Japanese Government Railways.—The receipts of the Government Railways during the month of April amounted to 10,491,219 yen, of which 5,856,695 yen was from passenger traffic and 4,634,524 yen from freight traffic. The figures show a decrease of 144,795 yen on passenger traffic and an increase of 224,681 yen on freight traffic as compared with

the corresponding month of last year. The average receipts per mile in one day was 66.87 yen which is a decrease of 1.78 yen as compared with the corresponding period of 1912.

New Railway Lines.—The Kyosei Electric Railway Company at a general meeting held recently, authorized the board of directors to raise 750,000 yen, either by a bond issue or by borrowing, for the purpose of building the Kanamachi line and a line between Ichikawa and Funabashi. The Kyosei Railway starts from Oshiage, Honjo, and proposes to reach Narita.

Japanese Railway Funds.—In regard to the expenditure to be defrayed this fiscal year for the extension and improvement of the State railways, Mr. Tokonami, President of the Imperial Japanese Railway Board, says that the estimated revenue is some 33,000,000 yen, of which 18,000,000 yen is net profit, and 15,000,000 yen advance from the Deposit Bureau. This falls far short of the expenditure required for the satisfactory improvement of the railways, which amounts to at least fifty million yen. With a fund of only thirty million yen or so placed at the disposal of the authorities therefore, much cannot be expected this fiscal year. The authorities in the Department of Finance are quoted by the *Hochi* in this connection as stating that the Railway Bureau seems to be greatly dissatisfied with the estimated revenue this year, and not without reason, for besides the extension and improvement projects to be carried out there are schemes postponed from the preceding year, the expenditure on which aggregates something like fourteen million yen. The Finance authorities being well aware of these conditions wish to advance as much to the Board as possible, but the deposits in the postal savings banks, constituting the bulk of the financial resources of the Department, have witnessed a decided decrease of late years in sympathy with the general situation of the money market. In these circumstances, the Finance Department will be unable to advance more than five million yen for the current fiscal year.

Central Railway Station.—The Chuwo Teishajo (Central Railway Station) which is now under construction, is expected to be completed before the coronation ceremonies of the Emperor next year in Kyoto, and at the same time the express trains of the Tokaido line are all to arrive at the Central, instead of at Shimbashi station, though other trains will continue to arrive at Shimbashi for some time yet.

Nara Railway Projected.—Messrs. Kuni-suke Okazaki, M.P., Kozo Kaino, M.P., and some others have planned to construct an electric railway line between Kyoto and Nara with a capital of 2,300,000 yen, for the conveyance of both passengers and freight between the two cities.

No Broad Gauge for a While.—Mr. Tokonami, the president of the Board of Railways, recently stated that the Government, considering the financial circumstances of the country, has decided to give up the plan for widening the railway gauge. As a result of this there are to be stopped all the preparations that have been or are being pushed on for the widening of the gauge, including the suspension of the construction of the branch of the Tokaido line through Atami.

Expenditure for Railway Construction.—It has been decided of late that this year's expenditure for the construction and repair of Japanese Government railways should be 43,000,000 yen, which is to be spent:—15,450,000 yen for the construction of new lines, 12,300,000 yen for the repair of existing ones, 11,300,000 yen for both factories and cars, 3,400,000 yen for electricity, and 150,000 for steamers.

Double-track System of Tokaido.—The bridge works over the river Tenryu were expected to be completed in June, and the completion of the works means the finish of the entire construction of the double system for the Tokaido line.

MANCHURIA.

South Manchuria Railway.—The work of replacing the 64 lb. rails with 80 lb. rails has been commenced on the section of the South Manchuria Railway between Shuangmiaotzu and Manchung. A similar work was completed between Manchung and Changtu last year and between Chungku and Kaiyuan in the preceding year.

As the result of the revised service-regulations of the Imperial Government Railways, the South Manchuria Railway Company has been placed under the jurisdiction of the Imperial Government Railways so far as railway matters are concerned. The Company's other enterprises, viz., mining, shipping, harbors, electricity, gas, warehousing, hotels, etc., remain under the supervision of the Board of Colonization as hitherto.

We learn, says the *Manchuria Daily News*, that, under the sanction of the Tokyo Government, the South Manchuria Railway Co. is to raise 200,000 additional shares, amounting to Yen 40,000,000. The new shares will represent half the balance of the total authorized capital, viz., Yen 100,000,000. It may be mentioned that the present subscribed capital is Yen 20,000,000, of which Yen 16,000,000 has already been called up, the last and fourth instalment of Yen 4,000,000 having been called on June 1st. The remaining Yen 4,000,000 will be called some time during the present current year. As referred to repeatedly, the two last-mentioned instalments are to be employed as part of the Company's capital expenditure for the current fiscal year, which amounts to Yen 14,100,000. Yen 2,000,000 will be set aside for the same purpose from the Company's profits for the present working year. It is to supply the deficit of a little over Yen 4,000,000 that the new shares are to be offered for subscription. From what we can glean, the Company will not invite the public to subscribe to the new shares, but is inclined to allot two shares to each share held by the shareholders on the Register. One-tenth of the new share capital, viz., Yen 4,000,000, at the rate of Yen 20 per share, will be called up for payment on September 1st.

The South Manchurian Railway workshops at Shahokou near Tairen, are now completely equipped and efficiently staffed, and have started making passenger and goods cars, which are said to be nearly as good as those ordered from the best makers abroad, says the *Japan Chronicle*. As the demand for increased carrying capacity on the railway is rising by leaps and bounds, the Company proposes to construct twenty goods cars at the workshops during the current year, and a saving of about Y. 1,000 is expected on each car. The carrying capacity of the line was raised last winter to 12,000 tons per day from 6,000 tons on the reconstruction of the railway, and will be again increased by about 6,000 tons or so when the new cars are ready for service by the end of this year.

A semi-annual general meeting of the South Manchuria Railway Company, was held at the Tokyo Chamber of Commerce. Mr. Nakamura, the president of the company, in the chair, made reports upon the business condition of the company, and then the following accounts of dividend was adopted for the latter half of the year 1912-13:

	Yen
Profit.. ..	4,926,044
Forwarded	2,311,469
Total	7,237,514
To Wit	
Legal reserve.. ..	246,302
Dividend on shares in Government possession	2,000,000

Dividend on other shares (6 per cent.)	540,000
Special reserve	2,000,000
Bonus, etc.	300,000
To be forwarded,	2,151,212

Japanese papers report that Mr. Nakamura, the president, will resign in November, when his present term of office is to expire, and will probably be succeeded by Mr. Hiraoka, the civil Governor of Karafuto. His resignation is also expected to be accompanied by some changes among directors and some other officials of the company.

Light Railways Postponed.—The *Manchuria Daily News* is given to understand that the proposed light railway line between Mukden and Jehol, which was on a fair way to the commencement of work, will be probably deferred or abandoned for financial reasons of the central treasury, despite all the efforts of Gov. Changhsilan of Mukden and Military Governor Hsiung-hsiling of Jehol. Another light rail line between Chinchow and Taonanfu, now being surveyed by a party of Chinese engineers, as reported previously, is said to have no better chances to have work started thereon owing to the same reasons.

Dairen and Port Arthur.—In order to further facilitate the communication between Dairen and Port Arthur, the South Manchuria Railway Co. is reported to have placed an order with an American company for some locomotives to be actuated by kerosene oil. These locomotives are expected to be here by the end of this year. When they are put in service, it will take only an hour for a trip either way against an hour and a half at present. The five trips each way daily, as is on the train schedule now, may then be increased to ten trips a day.

MALAYA

Penang Hill Railway.—The *Pinang Gazette* understands that the Secretary of State's approval has been given to the scheme for the construction of a railway up Penang Hill.

Work is to be commenced immediately under the supervision of Mr. Johnson, the P. W. D. engineer who prepared the plans and who is now in Penang.

The Kedah Railway.—A correspondent writing from Alor Star gives some interesting particulars in reference to the first section of the Kedah Railway. He says:—The embankment which can be seen in a straight line as far as the eye can reach, has been thrown up for about seven miles and is about half completed, and the permanent way should be laid down with trolleys running on this section in about three months' time. The river where the railway bridge will cross is about 250 feet wide and a quarter of a mile above the footbridge. The piles are not yet driven for the bridge, but a few close to the bank are in, and a wharf for landing goods is being erected on them, while close by the winches are connected up and steam gear is available for lightering goods and pile driving. There is a drainage canal on each side of the embankment, one side of which will probably be available for paddy boats. All kinds of labour are employed, Tamils and Malays at the embankment, Chinese builders and Bengalis at the wharf and pile driving. The coolie lines are clean and airy and the quarters of the staff very dry and comfortable.

SIBERIA

The Amur Railway.—A Vladivostok telegram to the *Mainichi* states that, according to Japanese who have returned from Blagovestchensk, the construction of the Western Amur Railway between Blagovestchensk and Strye-

tensk, 900 Russian miles, has been concluded and that the trial will shortly be held, the public service being inaugurated immediately afterwards. The bridging of the rivers has proved a very difficult task, and has not yet been completed. The train services will therefore be connected by ferries for the time being.

SIAM

Hua Lampong Terminus.—The *Bangkok Times* understands that the King of Siam has approved of the plans designed by Mr. E. Manfredi, of the Royal Arts Department, for the completion of the terminus of the Royal Railway Department at Hua Lampong. The new buildings, which follow the lines of Italian classic buildings, will provide a very imposing entrance to the railway station proper. This latter building has been finished for something over twelve months, but pending the Royal decision in the design for the façade, work has been temporarily stopped. It is now understood that the building of the waiting rooms to be situated on the Rong Muang road and Klong Padung side will be proceeded with at an early date. The façade will be surmounted by the Royal Monogram and underneath will be placed a large clock.

When the houses at present standing at the entrance to the new terminus are removed it will be seen that the building has been planned on a scale worthy of the importance of the northern railway system.

GENERAL

The Siam-Tavoy Railway.—A correspondent writes to *The Burman*:—"I promised to give you my opinion on the proposed railway lines which are to eventually connect with the Siamese Railway system, at Ban Pang on the River Me Klawng.

"Two alternative lines are proposed, one of which is aligned from Moulmein via Mudon, thence across a gap in the Taungmyo range to Ule, then crossing the Ataran River to Three Pagodas at Paya-thonzu, a distance of 108½ miles. This takes the line to within 240 miles of Ban Pang. The other is via Tavoy to Amya, 120 miles from Ban Pang. From Three Pagodas a loop can be formed on the Tavoy line by connecting it with Ye, lying direct east and west. The line to Three Pagodas will go across a tract of country in which mining for tin and wolfram is going on, and which is now being extensively utilized for the cultivation of cotton and rubber. As I told you in my last, Paya-thonzu lies at the base of a mountainous tract of neutral territory between Siam and the Tenasserim Division known as Kyaukkaung. Thither proclaimed offenders from here as well as from Siam fly for refuge. The line to Three Pagodas will, therefore, be advantageous both from an economic as well as an administrative point of view, while the other line, except for a shortness of the distance by 120 miles, has no such claim. There is an ancient Talaingi Road from Three Pagodas to Ye, by which the escaped convicts from the Andamans tried to reach Kyaukkaung a few years back."

Burma-China Railway.—The question of a railway from Burma to China, which has been raised once more by the Liverpool and Manchester Chambers of Commerce, who are preparing to take the matter up with the Secretary of State, came before the Burma Chamber of Commerce at their last meeting at Rangoon.

The Chairman explained that he had gone into this question and found that there were three possible railway routes from Burma to China. The first of these was a line from Bhamo to Tengyueh, a distance of 120 miles. This line might conceivably pay a small return on capital outlay, but its ultimate extension to Talifu was not hopeful because the country beyond Tengyueh was extremely difficult, and there was no particular trade to be tapped. The second possible route was the Northern Shan States Railway from Mandalay past

Maymyo and on the Lashio. This was not a promising line, and there were those who felt that it should never have been built at all. The third possibility of a railway connecting Burmah with China was to be found in the Southern Shan States line from Thazi to Taunggyi, which might be extended eventually into China via Kengtung. This line deserved close attention as it would pass through a rich country of rolling plains possessing a soil capable of producing crops of almost any description. Moreover, this route probably afforded the easiest alignment into China and would possibly merit construction sooner or later, but the present unsettled state of China, particularly on the Burma frontier, rather forced railway proposals into the background at the moment.

It was resolved that the Liverpool Chamber be informed that the committee of the Burma Chamber have read in the Journal of the London Chamber of Commerce of the interest the Liverpool Chamber is taking in the matter of a railway from Burma to China, and will fully support any approved scheme that may be adopted for the purpose of furthering railway connection in that direction.

TRAMWAYS

Singapore Electric Tramways.—The accounts of the Singapore Electric Tramways show an excess of revenue over expenditure of £34,439, the profit for the year, after charging debenture interest, depreciation and royalty paid, being £5,358. Compared with 1911, tramway revenue shows an increase of £1,446. There were 398,080 more passengers carried in 1912, than in 1911, the car mileage being 29,698 less. After lengthy negotiations with the Municipal Commissioners of Singapore, the company has been able to secure an extension of the arrangement under which it supplies current for lighting and power purposes.

More Bogie Cars for Tokyo.—The Tokyo Tramway system has at present 150 bogie cars running each day, and 30 more are expected shortly to arrive from abroad, while 100 more have recently been ordered abroad. On their arrival, which is expected by the end of this year, they will surely add a great deal to the facilities of the tramway system in the city.

Shanghai Electric Construction Co., Ltd.—The directors' report for the year to December 31, 1912, stated that the accounts show a profit of £24,727, which compared with £14,139 for 1911. Including the amount brought forward from the preceding year, the total standing to the credit of profit and loss account, before making any appropriations, was £28,028. There had been transferred to reserve for renewals account £8,500, and there had been applied in reduction of the preliminary expenses account £1,554, leaving a disposable balance of £17,974. The directors recommended the payment of a dividend of 5 per cent. for the year (less income-tax), absorbing £16,000, leaving to be carried forward £1,974. The percentage of loss by exchange on subsidiary coinage was higher in 1912 than 1911, but had recently shown a tendency to decrease. The loss under this head for the year was £23,937, and was almost equal to 7½ per cent. on the capital of the Company. The sanction of the Municipal Council of Shanghai had been obtained for a new type of motor car, and the rolling stock is being increased this year by 15 motor cars and 10 trailers.

Shanghai Tramways

The returns of the Shanghai Tramways (Foreign Settlement) for five months ended May 31, 1913, are as under:—

	1913.	1912.
	\$	\$
Effective receipts (after deducting loss on subsidiary coinage)	346,276.09	313,301.85
Passengers carried	17,270,360	15,710,639

Car miles run 1,099,619 1,123,730
The loss by depreciation of subsidiary coinage for the period was \$94,462.98, equal to 22.76 per cent. of the gross cash collected on the cars, as compared with \$96,521.91, equal to 25.13 per cent. for the corresponding period last year.

Week ended May 21, 1913:—

	1913.	1912.
	\$	\$
Effective receipts (after deducting loss on subsidiary coinage)	17,355.94	15,181.11
Passengers carried	884,149	783,916
Car miles run	53,410	52,762

The loss by depreciation of subsidiary coinage for the week was equal to 23.43 per cent. of the gross cash collected on the cars as compared with 25.76 per cent. for the corresponding week last year.

Week ended May 28, 1913:—

	1913.	1912.
	\$	\$
Effective receipts (after deducting loss on subsidiary coinage)	14,878.78	14,802.46
Passengers carried	761,466	732,701
Car miles run	51,884	54,021

The loss by depreciation of subsidiary coinage for the week was equal to 23.44 per cent. of the gross cash collected on the cars as compared with 25.21 per cent. for the corresponding week last year.

Week ended June 4, 1913:—

	1913.	1912.
	\$	\$
Effective receipts (after deducting loss on subsidiary coinage)	15,897.79	15,300.01
Passengers carried	817,282	773,463
Car miles run	54,385	52,637

The loss by depreciation of subsidiary coinage for the week was equal to 23.54 per cent. of the gross cash collected on the cars as compared with 25.08 per cent. for the corresponding week last year.

Week ended June 11, 1913:—

	1913.	1912.
	\$	\$
Effective receipts (after deducting loss on subsidiary coinage)	19,598.53	15,581.42
Passengers carried	1,027,802	800,503
Car miles run	57,455	53,427

The loss by depreciation of subsidiary coinage for the week was equal to 23.44 per cent. of the gross cash collected on the cars as compared with 25.32 per cent. for the corresponding week last year.

Peak Tramway Co., Ltd. (Hongkong).

The report of the Directors for the year ending 30th April, 1913, states:—

The Net Profit for the twelve months, after deducting Directors' Fees and General Managers' Remuneration and providing for loss on subsidiary coins, amounts to .. \$34,947.57
To which has to be added the balance brought forward from last account 3,402.74

Making available for appropriation \$37,350.31

The Directors recommended that a dividend at the rate of 8 per cent. per annum be paid to shareholders, absorbing \$24,000, that \$12,000 be transferred to reserve fund, and that the balance of \$1,350.31 be carried to a new profit and loss account.

MINING

Kailan Mining Administration.—The output of the Kailan Mining Administration's mines for the week ending May 24, amounted to 36,135 tons and the sales during the same period, to 37,769.81 tons.

Week ending May 31, output 37,140.66 tons and the sales during the same period amounted to 35,583.16 tons.

Week ending June 7 output 34,431.83 tons and the sales during the same period amounted to, 36,880.39 tons.

Week ending June 14, output 31,588.98 tons and the sales during the same period, to 33,175.81 tons.

Colorado Mining Co (P.I.).—This company has declared a dividend of ten per cent. and has carried forward P.100,000.

Penchiu Coal.—The *Manchuria Daily News* hears that contracts have been signed for the sale of 100,000 tons of Penchiu coal to Japan, 50,000 tons to Shanghai, and 100,000 tons to Chosen and Manchuria, all during the present fiscal year. It is said that the Chinese warships having their base about Shanghai have also placed an order with the colliery management. Altogether demands for this coal have increased on all sides. The daily output of the colliery has now been raised to about 1,000 tons.

Philippine Exploration Co.—The result of the work on the Gumaos property (P.I.) during the month of April, was as follows: Gold recovered 1,140 oz.; approximate value P.42.00. Dredge worked for 25 days, of which 7 days were expended in working through tailings.

Kyushu Mining Co.—At the Kyushu Mining Company's regular meeting the following accounts were to be submitted:—

Net Profit	38,821.63
Brought over from last account	14,213.60
Total.. .. .	53,034.69
Legal reserve.. .. .	1,950.00
Second reserve	3,890.00
Carried to next account	47,194.69

It was expected that at the conclusion of the regular meeting an extraordinary meeting will be called to consider a proposal to float a loan to the amount of 1,300,000 yen, bearing 7 per cent. interest, with a view to supplying a deficiency in the working capital of the company.

INDUSTRIAL

Activity in Paper Market.—The recent increase in the demand for paper has produced, it is said, much activity in the Japanese paper market, and to meet this state of affairs, many companies are contemplating increasing their manufacturing capacity. For instance the Fuji Paper Milling Company is enlarging two of its mills in Shizuoka and Hokkaido, and it has the intention to further expand its business at the cost of 1,000,000 yen or so.

PUBLIC WORKS

Tokyo Sewerage System.—The present repairing work of the sewerage system in Tokyo was undertaken in 1911 to be completed in 1915 at the cost of 6,130,000 yen, but at a recent meeting of the Aldermanic Assembly this expenditure was increased by 670,000 yen and the period of repairing works also extended by two years.

Hospital at Cebu.—Plans have been submitted by consulting architect William E. Parsons to Dr. Victor G. Heiser, director of health, for the communicable diseases hospital which is to be erected at Cebu and operated in connection with the southern islands hospital. The building, when finished, will be one of the most handsome in Cebu and will cost about P60,000.

IRRIGATION, WATERWORKS, ETC.

Wuchang Water Supply.—A contract has been signed with the Syndicat Sino-Europeen for a complete water supply for the city of Wuchang, the capital of the Province of Hupeh. The contract provides for the erection of a complete works which will have a capacity of 4,000,000 gallons of water to commence with. The intake will be in Yang-tze River, and the water tower will be located on Serpent Hill in the centre of the city. The estimated cost of the work is Tls. 1,500,000, and the whole contract is expected to be completed within two years.

PERSONAL

Sir John Jordan, the British Minister at Peking, left for England early in June, on furlough.

Dr. Wu Ting-fang, at the request of President Yuan Shih-kai, visited Peking in June. Dr. Wu is said to have been offered the post of Premier, while other reports state that he is to go to Washington as Ambassador.

We regret to record the death of Herr Rump, who was appointed Director of the Chinese National Loan Bureau. It is understood that Mr. Pfeiffer, of the Deutsch-Asiatische Bank at Shanghai, has assumed the duties connected with the post.

The *Central China Post* understands that the following appointments have been made for the German section of the Hankow-Szechuan railway:—Mr. Clement as Secretary to Mr. Linow, Engineer-in-chief; Mr. Fuchs, formerly of Wuchang, and Mr. Rump as surveyors.

Mr. H. F. Merrill, Commissioner of Customs at Shanghai, has been granted long leave, and has handed over charge of the Shanghai Staff to Mr. F. S. Unwin.

Mr. A. W. U. Pope, C. I. E., General Manager of the Shanghai-Nanking Railway, has left on Home leave. Before his departure Mr. Pope received numerous presentations and addresses of esteem and goodwill from the Chinese Chambers of Commerce of the towns served by the Railway, and from other organisations.

The Hon. Mr. Wickersham, ex-Attorney General in the Taft Administration with Mrs. Wickersham, has been visiting Tokyo and Peking.

The chief of the Chinese postal department, M. Piry, left by the Siberian route on leave recently and Mr. F. A. Aglen, Inspector-General of Customs, will take a short furlough soon. Senor Pastor, Spanish Minister to China, has returned to Peking.

SIR Everard Fraser, K.C.M.G., H. M. Consul-General at Shanghai and Lady Fraser have left for Home. Sir Everard will be away for eight months.

Mr. H. von Heidenstamm, Engineer to the Huangpu Conservancy, has left on a brief furlough.

Among the recipients of honours on the occasion of the birthday of King George of England were:—Mr. B. F. Alston, who has been appointed in charge of the Legation in Peking during the absence on leave of Sir John Jordan, who was created a Companion of the Order of the Bath; Mr. S. Barton, Chinese Secretary to the Legation, and Mr. W. P. Ker, Commercial Attaché, who had conferred upon them Companionships of the Order of St. Michael and St. George. Mr. Pollock, of the legation staff, also received the C.M.G.

Dr. Gatrell of Peking, has received from the President the 4th Chiaho Order.

The *Journal de Peking* states that Mons. de Martel, secretary of Embassy, will succeed Mons. Fr. Georges-Picot, who is going on six months' leave, at the French Legation, Peking, and is expected to arrive early in August. He is a nephew of the celebrated Countess de Martel, the "Gyp" of French journalism, and has been in the diplomatic service since 1901.

M. MAZOT, Assistant Manager of the Banque de l'Indo-Chine at Peking, has been appointed French Adviser to the Audit Department temporarily, but it is said to be doubtful whether M. Pardoux will ever take up the post.

Mr. Kingoro Nonomura, a director of the South Manchuria Railway Company, will represent Japan at the West Europe Railway Traffic Congress held at Moscow. Afterwards he will proceed on a tour of inspection through other European countries.

The Danish Minister to Peking, H. E. Count P. von Ahlefeldt Laurvig has left for Europe on three months' leave.

Mr. Arthur Hyde Lay has been appointed British Consul at Shimonoseki with Hiroshima, Yamaguchi, Fukuoka, and Oita Prefectures as his jurisdiction; while Mr. Thomas Joseph Harrington has been given a similar post at Tamsui, with jurisdiction over Taiwan and the adjoining islands.

During the absence of Mr. A. W. U. Pope, C. I. E., General Manager of the Shanghai-Nanking Railway on leave, Mr. E. R. Morris will act as General Manager and Mr. J. D. Read will act as Traffic Manager of the Railway.

Public Notification

CHINESE GOVERNMENT RAILWAYS

Shanghai-Nanking Railway

1. In the exercise of my authority as Managing Director of the Shanghai-Nanking Railway, I hereby give Notice that the public use of this Railway for the carriage of both Coaching and Goods Traffic is, and will be, till further notice, governed by, and subject to, the Bye-Laws and Regulations issued for the conduct of the same and exposed in the Premises of the Company, extracts thereof being posted in the vehicles in use.
2. Copies of such issues are available to the public on application to the Administration.
3. The substance of paragraph 1 of this notification will be printed on the backs of all Railway tickets, Goods Receipt Notes and similar documents as a condition of their issue to the public.

M. Y. CHUNG,
Managing Director.

Dated 5th June, 1913.

Managing Director's Office,
Shanghai.

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A. F. Craig & Co.

Life Insurance

China Mutual Life Insurance Co., Ltd.

Locks

Yale & Towne Mfg. Co.

Lubricants

Albany Lubricating Co.

Lumber Dealers

Robert Dollar Co.
 China Import Export
 Jardine, Matheson & Co.
 Port Banga Lumber Co.

Machinery Merchants

Anderson, Meyer & Co.
 Arnhold, Karberg & Co.
 Shanghai Machine Co.
 Fearon, Daniel & Co.
 Frank L. Strong
 Schuchardt & Schutte.
 Shanghai Dock & Engineering Co., Ltd.
 Samuel & Co., Ltd.
 Tulloch & Co.

Mill Machinery

Rose Downs & Thompson Ltd.
 Shanghai Dock & Engineering Co., Ltd.
 A. F. Craig & Co., Ltd.
 E. R. & F. Turner

Mining Machinery

American Trading Co.
 Melchers & Co.
 Shanghai Dock & Engineering Co., Ltd.
 Shewan, Tomes & Co.
 New York Engineering Co.

Mineral Oil Plants & Machinery

A. F. Craig & Co.

Motors

Shanghai Dock & Engineering Co., Ltd.
 Pratt's

Motor Launches

Shanghai Dock & Engineering Co., Ltd.

Paints Oils and Varnish

Standard Oil
 Albany Lubricating Co.
 F. A. Vander Loo & Co.
 J. Dampney & Co.

Packing

Greene Tweed & Co.

Pulleys (Steel)

Schuchardt & Schütte
 Shanghai Machine Co.
 Shanghai Dock & Engineering Co., Ltd.

Pumps

The Goulds Manufacturing Co.
 Shewan, Tomes & Co.
 Jardine, Matheson & Co.
 Shanghai Machine Co.
 Shanghai Dock & Engineering Co., Ltd.
 Joseph Evans & Sons

Railroads

Chinese Government Railways
 Manila Railroad Co.
 South Manchuria
 Southern Pacific Co.
 Chosen (Korea) Railways.

Railroad Supplies

American Trading Co.
 American Locomotive Co.
 Anderson, Meyer & Co.
 Arnhold, Karberg & Co.
 Baldwin Locomotive Work.
 Fearon, Daniel & Co.
 Hannoversche Maschinenbau A. G. Vormals
 Georg Eggestorff.
 Henschel & Sohn.
 P. Herbrand & Co.
 Jardine, Matheson & Co., Ltd.
 Melchers & Co.
 Mitsui Bussan Kaisha
 Shewan, Tomes & Co.
 Shanghai Machine Co.
 Shanghai Dock & Engineering Co., Ltd.
 Tyer & Co.
 U. S. Steel Products Co.
 Railway Signal Co., Ltd., The
 Robert Dollar Co.
 Samuel & Co., Ltd.
 Dick, Kerr & Co., Ltd.

Avonside Engine Co., Ltd.

Siemssen & Co.

T. H. Symington Co.

Reinforced Concrete Construction

Shanghai Dock & Engineering Co., Ltd.
 Trussed Concrete Steel Co.
 U. S. Steel Products Co.

Roofing Paper

California Manila Lumber Commercial Co

Rope Manufacturers

Johnson-Pickett Rope Co.
 U. S. Steel Products Co.
 Ynchausti & Co.
 Shewan Tomes & Co.

Ship-Chandlery

Ynchausti & Co.

Shipping Agents

Cia. General de Tabacos
 Shewan, Tomes & Co.
 Stevenson & Co., Ltd.

Shipbuilding and Repairs

Fiat-san Giorgio Ltd.
 Tsingtau Werft
 Hongkong & Whampoa Dock Co., Ltd.
 Kiangnan Dock and Engineering Co., Ltd.
 Mitsui Bishi Dock and Engineering Works
 Shanghai Dock and Engineering Co., Ltd.
 Smith's Dock Co., Ltd.
 The Talkoo Dockyard and Engineering Company of Hongkong, Limited
 William Cramp & Sons.

Steamship Companies

Cia. General de Tabacos
 Pacific Mail S. S. Co.
 Ynchausti & Co.
 Toyo Kisen Kaisha.

Steel Manufacturers

United States Steel Products Export Co

Steel Works

Bohler Bros. & Co., Ltd.
 U. S. Steel Products Co.

Stokers

Babcock & Wilcox Ltd.

Structural Steel

Bohler Bros. & Co.
 Shanghai Dock & Engineering Co., Ltd.
 U. S. Steel Products Co.

Sugar Machinery

Honolulu Iron Works.

A. F. Craig & Co.

Superheaters

Babcock & Wilcox Ltd.

Tanks

Pacific Tank and Pipe Co.
 Shanghai Dock & Engineering Co., Ltd.
 U. S. Steel Products Co.
 A. F. Craig & Co.

Telephones

The Western Electric Co.

Textile Machinery

A. F. Craig & Co.

Tiles and Bricks

Green Island Cement Co., Ltd.
 Chinese Eng. Mining Co.

Tobacco Dealers

British-American Tobacco Co., Ltd.
 Cia. General de Tabacos
 Olsen & Co., Walter E.

Tools

American Tool Works Co.
 Lodge & Shipley Machine Tool Co.
 Shanghai Machine Co.
 Easterbrook Allcard & Co., Ltd.
 The Selson Engineering Co., Ltd.
 Shanghai Dock & Engineering Co., Ltd.

Windmills

Defiance Machine Works.

Water Softeners

Babcock & Wilcox Ltd.

Wood Working Machinery

American Tool Works Co.
 Defiance Machine Works.
 Lodge & Shipley Machine Tool Co.
 Shanghai Dock & Engineering Co., Ltd.